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TYPHUS FEVER: TYPHUS VIRUS IN FECES OF INFECTED FLEAS (*XENOPSYLLA CHEOPIS*) AND DURATION OF INFECTIVITY OF FLEAS

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As a step in the elucidation of the mechanism by which the rat flea (*Xenopsylla cheopis*) transmits endemic typhus fever of the United States from rat to rat, or from rat to man, experiments have been made to determine the presence of the virus in the feces of infected fleas. As noted in a previous publication (1), the feces of fleas infected by feeding on white rats which had been inoculated with the virus of endemic typhus were found to be infectious. The experiments bearing on this point follow:

Rat fleas (*Xenopsylla cheopis*) were placed in one of the glass boxes previously used in transmission experiments (2) (3). White rats were inoculated with the virus of endemic typhus and introduced into the box which contained the fleas. After a period of two weeks a few fleas were removed, ground up in salt solution, and injected into 2 guinea pigs. The reaction typical of endemic typhus resulted in both injected animals. Approximately 50 fleas were then removed from the glass box and placed in a test tube overnight. The following morning all fleas and eggs were removed carefully from the test tube. The feces which had been deposited on the walls of the test tube were taken up in salt solution and injected into 2 guinea pigs. Both of these guinea pigs developed typical clinical endemic typhus. One of these guinea pigs was later found to be immune to a known strain of endemic typhus. The second animal was sacrificed to obtain material for inoculation of other guinea pigs. This strain was carried in animals for four generations, a total of 22 guinea pigs and 2 rabbits being used. Eighteen of these guinea pigs developed typical clinical endemic typhus, and one of these animals, from the fourth transfer generation, was tested for immunity to endemic typhus and found immune. The sera of the two rabbits developed agglutinins for *B. proteus* X_{19}, type O, the serum of one rabbit giving complete agglutination in a dilution of 1:80, while the second showed

complete agglutination at 1:160; incomplete at 1:320 and 1:640; and partial agglutination at 1:1280.

This experiment was repeated twice, the two strains established in these repetitions being known as flea feces virus X–8 and flea feces virus X–13, respectively. Both of these strains were studied carefully in guinea pigs and rabbits for several generations. A total of 51 guinea pigs and 4 rabbits (10 generations) were inoculated with strain flea feces X–8. Thirty-nine of the guinea pigs inoculated with this strain developed clinical endemic typhus, while of the 4 rabbits inoculated, 1 died, and the sera of the 3 remaining developed agglutinins for *B. proteus* X_{19}, type O, as shown in Table 1.

TABLE 1.—*Agglutination of B. proteus X_{19}, type O, by the sera of rabbits following inoculation with virus strains recovered from feces of typhus-infected fleas*

Rabbit	Flea feces X-8									Rabbit	Flea feces X-13								
	Number of weeks after inoculation	Serum dilutions									Number of weeks after inoculation	Serum dilutions							
		10	20	40	80	160	320	640	1,280			10	20	40	80	160	320	640	1,280
4621A	0	2	0	0	0	0	0	0	0	4532A	0	2	0	0	0	0	0	0	0
	1	4	4	4	3	0	0	0	0		1	4	4	4	4	2	0	0	0
	2	3	4	3	1	0	0	0	0		2	4	4	4	3	2	0	0	0
	3	4	4	4	4	2	0	0	0		3	4	4	4	4	2	0	0	0
											4	4	4	3	0	0	0	0	0
4792A	0	0	0	0	0	0	0	0	0	4532B	0	3	2	0	0	0	0	0	0
	1	4	4	4	4	2	0	0	0		1	4	4	2	0	0	0	0	0
	2	4	4	4	4	4	3	1	0		2	4	4	4	4	4	3	1	0
	3	4	4	4	4	3	1	0	0		3	4	4	4	4	4	4	3	0
4792B	0	1	0	0	0	0	0	0	0		4	4	4	4	4	4	2	0	0
	1	3	3	2	1	0	0	0	0										
	2	4	4	4	4	2	0	0	0										
	3	4	4	4	4	2	1	0	0										

Rickettsiae were found readily in smears made from the tunica vaginalis of guinea pigs injected with the flea feces X–8 strain of virus. Of three brains examined histologically, all showed the lesions characteristic of endemic typhus in the guinea pig. That a definite cross immunity existed between this strain of virus and known endemic typhus strains is shown in Charts I and II.

The strain known as flea feces X–13 was studied in guinea pigs and rabbits for nine generations, 66 guinea pigs and 2 rabbits being used. Approximately three-fourths of the guinea pigs developed clinical endemic typhus. The sera of the rabbits developed agglutinins for *B. proteus* X_{19}, type O, as shown in Table 1.

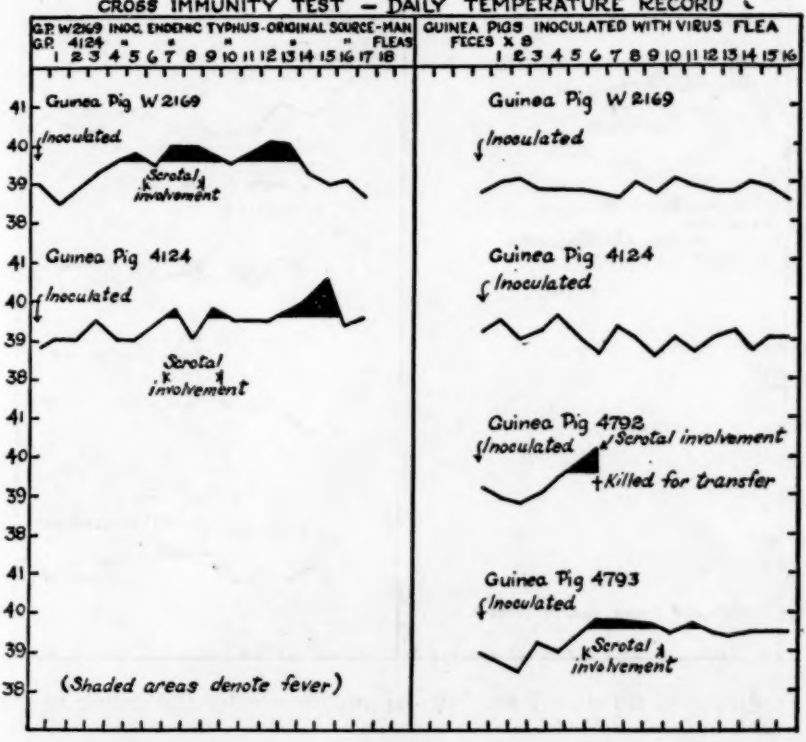
Rickettsiae were found readily in smears made from the tunica vaginalis of guinea pigs infected with this strain of virus. Brains from five guinea pigs from this strain were examined histologically and characteristic lesions of endemic typhus were found in four of them. Clear-cut cross immunity was found to exist between this strain of virus and known strains of endemic typhus virus.

Experimental work on the viability of typhus virus in infected fleas shows that the virus may remain virulent in the rat flea (*Xenopsylla cheopis*) for as long as 36 days after the last infecting feeding. It seems probable that once this species of flea becomes infected it may remain infective through life.

Attempts have been made to recover typhus virus from fleas hatched from eggs of infected fleas. In none of these attempts has

CHART I

CROSS IMMUNITY TEST — DAILY TEMPERATURE RECORD



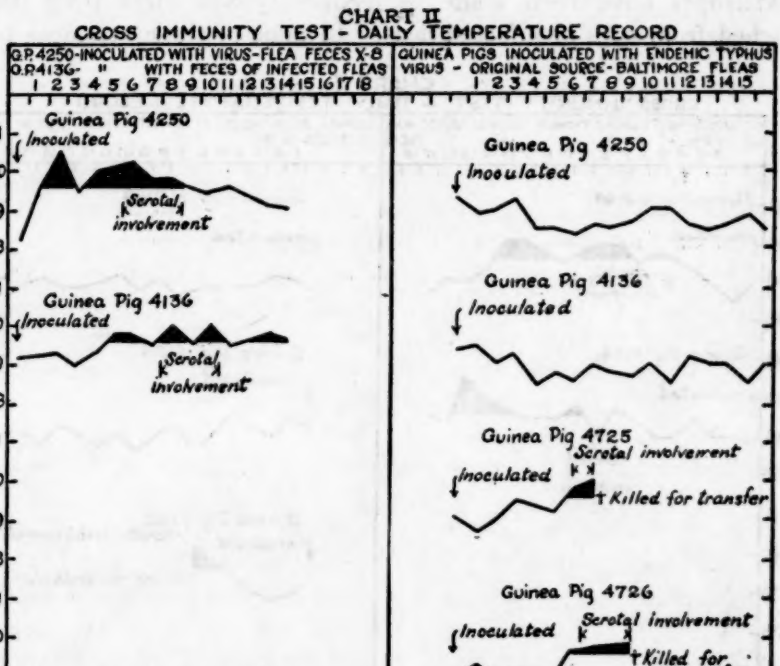
evidence been procured that typhus virus may be transmitted by infected fleas to their offspring through the egg.

In the past few months we have attempted repeatedly to transmit typhus by feeding infected fleas on normal guinea pigs. In these experiments the fleas were confined in test tubes which were closed by stretching chiffon over the mouths of the tubes. The fleas fed readily through the chiffon but in no instance did the guinea pigs develop evidence of typhus, nor were they found later to be immune to subsequent injections of typhus virus.

In view of the negative results in our attempts to transmit typhus by direct bite of infected fleas, arranged in such a manner as to practically eliminate any part the feces might play, we tried to transmit the infection by crushing infected fleas and smearing them on the

abraded abdomen of guinea pigs. In this experiment we were successful.

Without placing too much stress on our negative results in direct feeding of infected fleas, the foregoing work suggests that a probable mechanism by which endemic typhus may be transmitted is through



the rubbing of infected feces into wounds made by the biting of the flea or by scratching.

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(2) Dyer, R. E., Ceder, E. T., Rumreich, A., and Badger, L. F. : Pub. Health Rep., 46 : 1869 (Aug. 7), 1931. Reprint No. 1498.

(3) Dyer, R. E., Ceder, E. T., Lillie, R. D., Rumreich, A., and Badger, L. F.: Pub. Health Rep., 46 : 2481 (Oct. 16), 1931. Reprint No. 1520.

ANOPHELES ATROPOS D. & K.—A NEW POTENTIAL CARRIER OF MALARIA ORGANISMS

By Bruce Mayne, *Special Expert*, and T. H. D. Griffitts, *Surgeon, United States Public Health Service*

The specimens of the *Anopheles atropos* D. & K. used in the infectivity experiments described here were captured as imagoes on the three days, October 29 and 30 and November 2, 1931, in a salt marsh at Pointe aux Chenes, near Ocean Springs, Miss. It was desirable to supplement these collections with bred-out material, but we were not successful in finding a sufficient number of aquatic forms, due probably to the extreme drought prevailing at this time. Therefore, recourse was had to capturing adults which were attracted to the persons of the collectors. The collections were made by visiting small salt pools deep in the marsh and allowing the mosquitoes to attack while remaining quiet. In this manner two collectors captured approximately 50 female specimens of *Anopheles atropos*, some of which were permitted to become blood engorged. The mosquitoes were collected in glass tubes and transferred immediately to cloth cages, made after the pattern of the Barraud shipping cage. These cages are admirably suited for shipment at long distances, for they are so constructed that the live specimens of mosquitoes are kept in a humid atmosphere by means of moist cotton gauze surrounding the netted fabric protected by the galvanized wire frame.

The specimens while awaiting shipment were maintained by placing partially masticated raisins within reach of the insects. These cages were placed with a final moistening of the gauze pads in stout corrugated cardboard boxes and transported by post to Columbia, S. C. A count of the survivors yielded nearly 100 per cent, showing clearly the advantage of the netted cloth cages of the Barraud type over the metal cloth cages used for comparative purposes.

Table 1 details data in which the specimens of *atropos*, when applied to a suitable carrier of *P. vivax* gametocytes, proved infected on dissection.

Table No. 1.—*Designating atropos infections*

Serial No. of mosquito	Dates of biting carrier	Number of feedings	Date of dissection	Longest possible incubation	Results
	NOVEMBER			*Days*	
1	1, 5, 9, 11	4	Nov. 14	14	3 oöcysts, pigmented, largest 16 mu.
2	1, 3, 5	3	do	14	19 oöcysts, pigmented, 8–12 mu.
3	1, 3, 5	3	Nov. 10	10	3 oöcysts, pigmented, maximum 12 mu.
4	1	1	Nov. 7	7	1 oöcyst, pigmented, 4 by 8 mu.
5	1, 4, 8, 13	4	Nov. 15	15	38 oöcysts, undifferentiated, majority pigmented, 16–35 mu.
6	1, 6, 8, 11, 15, 18.	6	Nov. 19	19	6 oöcysts, 60–64 mu; 2 of them containing sporozoites; others segmented. In addition, 10 oöcysts pigmented, in size from 20–48 mu. No sporozoites in glands.

TABLE No. 1.—*Designating atropos infections*—Continued

Serial No. of mosquito	Dates of biting carrier	Number of feedings	Date of dissection	Longest possible incubation	Results
	NOVEMBER—con.			Days	
7	2, 5, 8, 10	4	Nov. 14	12	42 oöcysts, all but 1 pigmented, 24–33 mu; average 27 mu; 1 presegmented, size 32 mu.
8	2, 5, 8	3	Nov. 9	7	60 oöcysts, pigmented, average 8 mu.
9	2, 4	2	Nov. 8	6	68 oöcysts, pigmented, average 14 mu; maximum 16 mu.
10	2, 7, 9, 11, 15, 19.	6	Nov. 23	21	2 granulated oöcysts, 20–24 mu; 1 oöcyst capsule. Scanty number of free swimming sporozoites, size 12–13.2 mu. Glands: All lobes swarming with sporozoites; typically active, average size 12 mu, a few at 15.5 mu. Staining characteristic, single and double nucleus. Fields of sporozoites in massed heavy clusters.
12	3	1	Nov. 10	7	6 oöcysts, pigmented, 8–14 mu.
13	3, 7, 9	3	Nov. 12	9	26 oöcysts, size up to 22 mu; average 16 mu.
14	3, 7, 9	3	Nov. 15	12	53 oöcysts, majority pigmented or granulated; size 16–22 mu.
15	4, 6, 8	3	Nov. 13	9	24 oöcysts, pigmented; maximum 16 mu, average, 12 mu.
16	4, 6, 8, 10, 15, 21.	6	Nov. 27	23	Gut: More than 3-400 oöcysts covering the blood engorged organ, majority segmented, 12 at least ripe, with sporozoites; many free-moving sporozoites seen. Glands: Packed with very typical sporozoites.
17	4, 7	2	Nov. 11	7	2 oöcysts, size 9 mu.
18	4	1	Nov. 10	6	3 oöcysts, size 12–16 mu.
19	4, 6, 8, 10	4	Nov. 14	10	11 oöcysts, pigmented; maximum 23 mu.
20	5, 7, 9, 12, 15, 18, 21.	7	Nov. 25	20	Gut: A few pigmented oöcysts observed, size 17.76 mu. The gut blood engorged. Glands: Negative.
21	5, 9, 11, 15	4	Nov. 18	13	Approximately 40 oöcysts, 12–28 mu, majority 20–24 mu. Pigmented and granulated.
23	5	1	Nov. 8	3	36 oöcysts, size 4–9 mu.
25	6, 9, 12, 15	4	Nov. 17	11	15 oöcysts, 12–32 mu; pigmented, larger ones granulated.
26	7, 13, 16, 18, 21.	5	Nov. 25	18	Tremendous infection; both stomach and glands containing approximately several hundred oöcysts in various stages of development, particularly mature forms packed with sporozoites; mounting fluid contained matted clusters of actively wriggling sporozoites; thousands of these were observed; thoracic muscles in the region of the glands with extreme numbers of sporozoites; glands heavily packed; size 11–15.5 mu.
27	7	1	Nov. 13	6	4 oöcysts, pigmented, 14–16 mu.
29	9, 13	2	Nov. 15	6	14 oöcysts, pigmented; average 8 mu.

Summary of Table 1, designating atropos infections

Total dissected	28
Total with oöcysts—5 days or more	24
Total negative	3
Mosquitoes with sporozoites:	
Up to 15 days	0
15–23 days—	
Gut with sporozoites	4
Gland with sporozoites	3
Percentage of infections	85.7

SUPPLEMENTARY NOTES TO TABLE NO. 1 ON MOSQUITOES FOUND WITH MATURE ORGANISMS

Specimen No. 6.—This mosquito was induced to bite a patient suffering from the effects of an infection caused by *P. vivax*, resulting from mosquito biting experimentally. Six feedings were obtained during the 19 days' incubation period. The host's blood exhibited on two

occasions as high as 75 mature gametocytes to 1,000 leucocytes counted in a thick smear.

When dissected on November 19 the gut of this mosquito was found heavily engorged with blood undigested from its last meals. There were a total of 16 oöcysts observed, 10 of them 20–48 mu in size, all containing characteristic pigment. Four oöcysts were segmented; pigment here was absent, and the two remaining forms contained sporozoites, probably only recently ripened. The latter oöcysts and the other four just mentioned measured 60–64 mu. A prolonged search failed to produce free sporozoites in the mounting fluid surrounding the gut or in the material from the macerated thorax. The salivary glands appeared quite free of sporozoites.

Specimen No. 10.—Six infective feedings, synchronous with the preceding specimen, were allowed to this mosquito. It survived an incubation period of 21 days. The gut offered as evidence of infection two granulated oöcysts of 20 and 24 microns in size, and one discharged capsule of an oöcyst. Further evidence was observed in the presence of a scanty number of undetached sporozoites. These were 12–13.2 mu and actively motile along the gut wall.

The glands of the dissected mosquito were kept under observation during a period of six hours. All of the six lobes appeared crowded to the maximum capacity with sporozoites, while the forms already liberated in the saline suspension appeared in a swarming mat of typically active organisms. Their movement was undulating, while the tapering ends were observed to curve in the form of a shepherd's crook. The majority were seen with a single nucleus, many with two nuclei. The size varied in length from 12–15.5 mu, the majority measuring 12 mu, and their width being fairly uniform at 1–1.5 mu.

The dissected material was kept at a temperature of 60° F., and there appeared no diminution of activity after six hours.

After staining with Giemsa it was observed that the sporozoites were present in great profusion. They reacted quite specifically to the Giemsa stain. The sporozoites were again measured, the majority appearing contracted in length by 1 micron. They measured 11–14 mu. A single form, apparently unchanged, measured nearly 15.5 mu. It seemed considerably distended and disintegrated.

Specimen No. 16.—This specimen of *atropos* was given an opportunity to become infected during a development of 23 days while it was induced to bite a gametocyte carrier of *P. vivax* on six occasions. This mosquito had been applied to two patients,[1] who were selected for malaria therapy, before it was killed for the purpose of examination.

On the surface of the blood-distended gut wall, on a portion suitable for inspection, there were observed 12 oöcysts of size 55.5 mu,

[1] Both of these patients showed very marked clinical symptoms of malarial fever with typical specimens of *Plasmodium vivax* in their blood following an incubation period of 13 days and 16 days, respectively.

engorged with sporozoites. Several more oöcysts, 38.4 mu in maximum size, appeared on the edge of the gut tissue in a stage of presegmentation. In addition, several oöcyst capsules with collapsed walls were noticed on the gut wall, and after clearing some of the blood from the stomach, it was apparent that the gut surface was fairly covered with oöcysts in a stage of segmentation. There were evidently more than 300 to 400 of these.

Many sporozoites were observed freely moving in the fluid along the gut wall.

The salivary glands appeared packed to the utmost with living sporozoites, showing typical form and behavior when expressed on pressure of the cover glass. They measured in length 11–15.5 mu.

Specimen No. 26.—Five infective feedings were allowed this mosquito. It died after 18 days of parasite development. Upon dissection there was obviously a tremendous invasion of organisms in all stages. The gut contained several hundred oöcysts, particularly of the mature stages. Not only were the oöcysts fairly engorged with live-looking sporozoites, but there were matted clusters of tens of thousands of actively wriggling, sickle-shaped organisms surrounding the alimentary tract in the saline dissecting fluid.

Measurements of some of these oöcysts under usual pressure of cover glass resulted as follows:

Fourteen of the undifferentiated forms appeared to attain a maximum diameter of 66 mu.

Twenty of the segmented forms measured 39.6–50.6 mu.

Twenty of the forms containing sporozoites measured 48.4–61.6 mu.

The undetached sporozoites from the gut wall measured the same size as those examined from the lobes of the salivary glands, namely, 11.10 to 15.54 mu, with an average length of 13.32 mu and a width of 1.4 mu. The glands and the tissue of the macerated thoracic material were unusually heavily infected with great numbers of motile sporozoites measuring as previously recorded.

The controls used for the *atropos* infectivity tests were a collection of anophelines of three species captured from a stable about 20 miles from Columbia. They were treated in the same manner regarding the source of infection and exposure to temperature and humidity as the specimens of *atropos* described in Table 1. These data are described in Table 2.

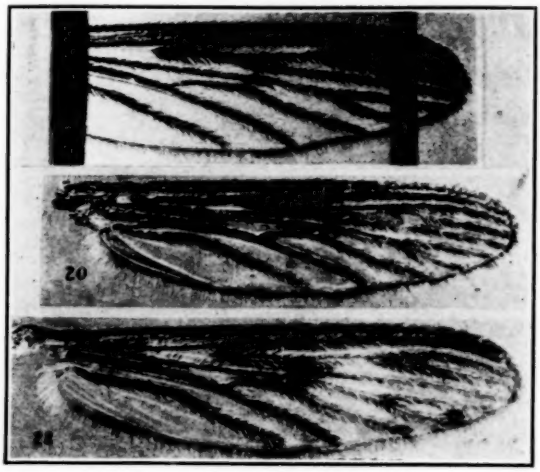

FIGURE 1.—Top: Portion of wing of *Anopheles walkeri* Theob.; 20, wing of *Anopheles atropos* D. & K.; 22, wing of *Anopheles quadrimaculatus* Say. Reproduced from plates of Howard, Dyar, and Knab. Mosquitoes of North America. Carnegie Press

FIGURE 2.—Photograph of *A. atropos* (× 4) specimen No. 16, mentioned in text, showing characteristic Culexlike attitude

FIGURE 3.—Portion of gut wall of *atropos* No. 16, showing one ripe oöcyst and ruptured oöcyst capsule

TABLE No. 2.—*Designating controls: Atropos infections*

Species and serial No.	Dates of biting carrier	Number of feedings	Date dissected	Longest possible incubation—days	Results
Quad. M-2	Oct. 19, 25, 29, and Nov. 2, 5, 8, 11.	7	Nov. 13	25	Several hundreds of oöcysts in all stages up to 68 mu. Sporozoites on gut. Glands: Numerous sporozoites.
Quad. M-4	Oct. 19, 22, 25, 28	4	Oct. 31	12	Moderate number of oöcysts; none over 24 mu.
Quad. M-6	Oct. 19, 23	2	Oct. 26	7	14 pigmented oöcysts, size 12 mu and under.
Punct. M-7	Oct. 19, 22, 25, 30	4	Nov. 9	20	33 oöcysts up to 65 mu, 6 with sporozoites; many sporozoites free on gut. Glands: maximum number of sporozoites.
Quad. O-2	Oct. 21, 24	2	Oct. 28	7	Several pigmented oöcysts, pigmented up to 20 mu.
Quad. O-3	Oct. 21, 24, 28	3	Oct. 30	9	22 oöcysts, pigmented and presegmented, size 16-24 mu.
Quad. O-7	Oct. 21, 25, 30, and Nov. 2, 5, 8.	6	Nov. 11	21	More than 100 (majority segmenting) oöcysts, size 48-60 mu. Many free sporozoites seen. Glands: Tremendous sporozoite infection.
Quad. O-9	Oct. 21, 24, 28, 31, and Nov. 3, 8.	6	Nov. 12	22	Specimen blood engorged at dissection; sporozoites seen along gut wall and in thorax
Quad. O-10	Oct. 21, 24, 28, and Nov. 2, 5.	5	Nov. 8	18	Oöcysts; total number 128, 3 with sporozoites; size 48-52-60 mu. Glands: Quite negative.
Punct. O-12	Oct. 21, 24, 28	3	Oct. 30	9	Moderate number of oöcysts, size 16-24 mu, pigmented.
Punct. P-3	Oct. 22	1	Oct. 29	7	11 oöcysts, size 12-20 mu; average 16 mu.
Punct. P-4	Oct. 22, 25, 28	3	Oct. 31	9	Moderate number of oöcysts; maximum size 20 mu.
Quad. P-6	Oct. 22, 25, 28, and Nov. 1, 4, 8, 11, 13.	8	Nov. 16	24	Approximately 150 oöcysts, 8-68 mu; average about 40 mu. Pigmented, granulated, and segmented forms. Numerous sporozoites in media surrounding stomach. Glands packed with sporozoites. Swarms in fluid active, 12-16 mu in size.
Punct. P-7	Oct. 22	1	Oct. 23	1½	Several hundred oökinetes observed.
Punct. P-9	do	1	Oct. 24	2	A few pigmented forms, quite immature.
Punct. Q-3	Oct. 23	1	Oct. 26	3	Great numbers of pigmented zygotes, less than 8 mu.
Punct. Q-4	Oct. 23, 26, 30	3	Nov. 6	14	About 200 oöcysts pigmented, none reaching segmented stage.
Quad. Q-5	Oct. 9, 24, and Nov. 3, 6, 11, 15.	6	Nov. 17	23	Upward of 100 oöcysts, 20-72 mu in size; majority 40-48 mu. Numerous sporozoites in mounting fluid. Glands packed with sporozoites, 12-16 mu. in size. Active and typical.
Punct. Q-7	Oct. 24, 28, 31	3	Nov. 3	10	8 oöcysts pigmented, 8-12 mu.
Punct. Q-8	Oct. 24, 28, 31, and Nov. 6.	4	Nov. 11	18	Approximately 125 oöcysts (100 counted) in all stages, except pigmented, up to 60 mu; majority with sporozoites. Glands: A scanty number of full-sized active sporozoites.
Punct. R-6	Oct. 30 and Nov. 2, 5, 8, 11.	5	Nov. 12	13	Approximately 125 oöcysts (54 counted); majority 22-28 mu, maximum 32 mu; presegmented stage mostly.
Punct. R-9	Oct. 30	1	Nov. 3	4	4 oöcysts, size 8-21 mu.
Punct. R-11	Oct. 30 and Nov. 2, 7, 10.	4	Nov. 13	14	About 60 oöcysts pigmented, size 5-8 mu.
Punct. R-14	Nov. 1	1	Nov. 8	8	As many as 90 oöcysts pigmented, maximum size 16 mu.
Crucians R-2	Oct. 26, 30, and Nov. 2, 5.	4	Nov. 10	15	Nearly 200 oöcysts (counted 180); majority stage of segmentation; size 60 mu. Glands: Apparently negative.

Summary of Table 2, designating controls: Atropos infections

Total dissected	38
Total with oöcysts—5 days or more	21
Total negative	13
Mosquitoes with sporozoites:	
Up to 15 days	0
15 to 25 days—	
Gut with sporozoites	1
Gland with sporozoites	7
Percentage of infections	55.2

There are offered for comparison the results of attempting to infect specimens of *Anopheles quadrimaculatus* obtained in the same general region of the Gulf coast where the specimens of *atropos* were collected.

Six of the specimens which survived the shipment from place of origin and developed the infection after biting the tertian carrier in two to five applications are included in the following table:

TABLE No. 3.—*Regarding infections of quadrimaculatus*

Serial No. of mosquito	Dates of biting carrier	Number of feedings	Date of dissection	Longest possible incubation	Results
				Days	
1	Sept. 5, 8, 11, 13.	4	Sept. 28	23	Gut: 9 oöcysts and 5 discharged. Size up to 48 mu granulated and segmenting. Two ripe with sporozoites. Glands: A few sluggishly active sporozoites in mounting fluid. Lobes of glands packed with normal appearing sporozoites, size 12–14 mu.
2	Sept. 5, 8, 11, 13, 15.	5	Oct. 2	27	Gut: Fairly covered with presegmenting oöcysts, size up to 64 mu; average size 45 mu. One with sporozoites. Glands: Devoid of sporozoites.
3	Sept. 5, 8, 11, 13.	4	Sept. 17	12	Gut: 8 oöcysts observed and 2 discharged forms. Glands: Moderate infection; sporozoites quite active and normal.
4	Sept. 5, 8, 12.	3	Sept. 14	9	Gut: 14 oöcysts, 4 of them segmented and sporozoites noted in 2 others. Glands: Scanty number of typical sporozoites. Normal in form, size, and motility. Size 12–14 mu.
5	Sept. 5, 9....	2	Sept. 12	7	Gut: 5 oöcysts present, 24–40 mu, pigmented and granulated forms. Sporozoites absent.
7	Sept. 6, 9, 12.	3	Sept. 15	9	Gut: A total of 152 oöcysts counted, 3 of these 56–68 mu in size. No sporozoites either on gut or in glands.

Summary of Table 3

Total dissected	7
Total with oöcysts—5 days or more	6
Total negative	1
With sporozoites up to 27 days:	
Gut	4
Glands	3
Percentage of infections	85.7

A note on the biological relationships of *Anopheles atropos* is contributed as a supplement to the present experimental data.

Habitat.—In the course of a survey of salt-marsh mosquito-breeding areas of the South Atlantic and Gulf States, conducted by the United States Public Health Service, *Anopheles atropos* has been recorded in the four States of Mississippi, Louisiana, Alabama, and Florida. It is strictly a salt-water mosquito, frequently found in the same habitat as *Aëdes sollicitans*, *Ae. taeniorhynchus*, and *Anopheles crucians*.

At Pointe aux Chenes, near Ocean Springs, Miss., where specimens of adults were captured which were employed in the infectivity tests recorded in this paper, are surrounding marshes characteristic of such habitats having a firm alluvial dense root mat formation, covered with a heavy growth of salt grass (Spartina spp.). Where salt pools,

which are the favorite production areas of *atropos*, occur in these marshes, the water can scarcely be muddied, the bottom of the pools being sandy, with sides of a firm clay. When production is said to be heavy, larvae of this species inhabit every square foot of water surface.

The preferential breeding place of *A. atropos* is characterized by the junior author as shallow water on muck or alluvial marshes, or in permanent salt pools whose water has a salinity (salinometer with direct salinity reading) of from 3 per cent to 21 per cent.

Host relations.—*Atropos* have been observed in great numbers n occupied rooms in hotels and private homes within flight distance of the production areas. The junior author has personally collected these mosquitoes at such places at Buras, La., and at Biloxi, Miss.

Biting habits.—Close to its breeding place in marsh areas *atropos* is known to attack in direct sunlight as well as by night. It is then a greater torment as a pest than the redoubtable *Aëdes sollicitans*, which shares its intrepidity in persisting in its attacks so that one may easily collect it when attached to its host by dislodging it with thumb and finger.

The culexlike attitude of atropos.—*Atropos* is distinguished at once from the common species of anophelines of America by its decided culexlike appearance, especially when attacking or resting after blood engorgement. This is further emphasized by its unorthodox nonanopheline wing, which is clear in the bright sunlight. When observed biting in the direct sunshine, this species assumes the 2-plane angle which does not characterize the common anophelines, namely, *quadrimaculatus*, *punctipennis*, or *crucians*. *Anopheles atropos* is observed to typify less the "standing-on-head" position while biting and often appears "sprawled" when about ready to finish the blood meal. The brown color of the mesonotum, as well as its near *Culex* position, makes this species often mistaken by the unwary for a *Culex*, especially because of its resemblance to *Culex salinarius*.

Morphological characters.—*Anopheles atropos* [2] is described by the taxonomist as a rather small blackish *Anopheles* with unspotted wings. Its wing scales are entirely dark, not forming spots. Its mesonotum

[2] The specimens of mosquitoes employed in our experiments were provisionally identified when collected alive and studied while biting and resting. The authors agreed to the specific identification of these specimens as *A. atropos* D. & K. Following the dissection of the stomach and salivary glands, all of the parts that were possible to salvage namely, wings, legs, abdominal integument, thoracic exoskeleton, and head with mouth parts, were meticulously assembled, placed in gelatine capsules, and submitted to Dr. Harold Morrison, Chief of the Taxonomic Division of the U. S. Bureau of Entomology. He, with the assistance of Dr. Alan Stone, dipterist of the U. S. National Museum, courteously consented to attempt to identify the species of the several mosquito remnants submitted. Their report is as follows: Only one of the specimens, namely, No. 14, was found impossible to examine. The remainder were regarded indeterminately, either *Anopheles atropos* Dyar and Knab, or *Anopheles walkeri* Theobald. "*Anopheles atropos* D. & K. can not be distinguished from *A. walkeri* Theob. in the female. It is difficult to distinguish them from *quadrimaculatus* Say. *Atropos* breeds in salt water, *walkeri* in fresh, and both occur in the South. Only a study of the male genitalia will separate these and there is some question as to their specific distinction."

is elongate and deep brown; abdomen blackish in the integument, with dark hairs; legs and palpi entirely dark, the latter with traces of paler markings at the articulations.

Color.—Recently emerged imagoes are very dark, almost a bluish black. Older specimens appear brownish or even remarkably reddish on the mesonotum.

The species of anophelines discussed in this paper can be distinguished in life from its nearest relatives, *Anopheles quadrimaculatus* Say, and *A. walkeri* Theob., but some confusion arises when identification is required of a specimen preserved for the museum. The following parallel, from a description of the females taken from Dyar's Mosquitoes of the Americas (1928), is offered in identifying the two more closely related species, *A. atropos* and *A. walkeri:*

Atropos (female)	*Walkeri* (female)
Proboscis: straight, black.	Slightly curved, black.
Palpi: black, small faint white rings, bases of joints.	Rather slender, black, yellowish rings at tips of all joints.
Occiput: black, erect forked scales and long bristles, all black.	Black, whitish spot on each side, scales erect, forked, black.
Mesonotum: black, brownish or black hairs; pleurae black.	Dark brown, more or less streaked with whitish; pleurae brown and grayish.
Abdomen: blackish, with brown-black hairs.	Black, with yellowish-brown hairs.
Legs: brown black, without spottings.	Black, with bronzy reflections, femora and tibiae yellowish white at tips.
Wings: scales black, without spots.	Scales black, not or faintly forming spots at bases of second to fourth veins and forks of second and fourth.

Temperature and humidity.—During the 25 days of the experimental investigation the specimens of *Anopheles atropos* and the controls were maintained at a relatively low temperature of 68° to 70° F. during the months of October and November. The relative humidity registered a high mean percentage of 80 to 90.

The conditions maintained for the specimens detailed in Table 3 were a decidedly higher temperature up to the development of sporozoites. The temperature here went to a maximum of 82° F. during the latter part of September and in October, and may account for the great acceleration of the appearance of gland sporozoites, namely, a minimum of nine days. In the other controls of the same species and the same parasite, *P. vivax* sporozoites did not appear before 18 days.

Conclusions.—*Anopheles atropos* D. & K. is presented as a new potential carrier of *Plasmodium vivax.* In infectivity tests it proved equal in efficiency to *Anopheles quadrimaculatus, A. crucians,* and *A. punctipennis* used as controls under similar or more favorable conditions.

Acknowledgments

The work of attempted infectivity was conducted at the South Carolina State Hospital, where, through the courtesy of the superintendent, Dr. C. F. Williams, and the medical director, Dr. E. L. Horger, and the other authorities of the State institution, suitable patients were provided for the use of the Government investigators. Mention should be made of the services of Mr. Hans E. Hingst, senior medical technician, who was indefatigable beyond the call of duty in contributing, largely by his skillful dissections, to the success of the experimental procedure.

CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES [1]

November 8–December 5, 1931

The prevalence of certain important communicable diseases, as indicated by weekly telegraphic reports from State health departments to the Public Health Service, is summarized in this report. The underlying statistical data are published weekly in the PUBLIC HEALTH REPORTS under the section entitled "Prevalence of Disease."

Poliomyelitis.—Further recovery from the recent epidemic of poliomyelitis continued through the month of November. For the current 4-week period the number of reported cases was only about 72 per cent of the number reported for the same period last year. The number was, however, more than three times the number of cases recorded for the corresponding period in 1929.

In the New England and Middle Atlantic States, where the epidemic first appeared, the number of cases for the current period was still almost double the number of cases reported for the same period last year. The South Atlantic States compared very favorably with last year and in other regions the decreases in the incidence of the disease ranged from 50 per cent in the West North Central States to 80 per cent in the Mountain and Pacific groups. In the latter group, this period last year marked the first appreciable decrease in the outbreak of poliomyelitis which had begun there earlier in the season. A comparison of this group with 1929, a more nearly normal year, shows that the incidence of the disease during the current period was about 15 per cent in excess of its incidence during the same period in that year.

[1] From the Office of Statistical Investigations, U. S. Public Health Service. The number of States included for the various diseases are as follows: Typhoid fever, 47; poliomyelitis, 48; meningococcus meningitis, 48; smallpox, 48; measles, 45; diphtheria, 47; scarlet fever, 47; influenza, 39 States and New York City. The District of Columbia is counted as a State in these reports.

The total number of cases of poliomyelitis reported for the current 4-week period was 625, approximately 1,200 less than were reported for the preceding 4-week period.

Diphtheria.—The total reported incidence of diphtheria (9,357 cases) for the current period was about 33 per cent higher than that of last year for the same period. All areas contributed to the increase except the New England and Middle Atlantic and East North Central. In the former group a slight decrease (6 per cent) was shown and in the latter group the figure for the current period equaled that of last year. The increases in the various groups ranged from 40 per cent in the Far West groups to 90 per cent in the West North Central group.

For the country as a whole the number of cases reported for the current period was approximately 500 less than was reported for the preceding 4-week period which might indicate that the peak for this year was passed during that period (October 11 to November 7). In each of the two preceding years the peak was reached during the period corresponding to the current 4-week period. For this period in 1930 the reported cases totaled 7,031, and in 1929, 9,405 cases were reported.

Measles.—The usual seasonal increase of measles continued through the current 4-week period. The number of cases (8,805) was about 15 per cent in excess of the number reported for the same period in 1930, but was 10 per cent lower than in 1929. The disease was most prevalent in States along the Atlantic coast, the number of cases being much larger than was reported in either of the two preceding years.

In the New England and Middle Atlantic group the number of cases reported during the current period was 4,993, as compared with 2,900 for the same period last year and 2,711 in 1929. The South Atlantic group reported 980 cases, as compared with 218 in 1930 and 212 in 1929. All other areas showed decreases this year, ranging from 75 per cent in the far west groups to 40 per cent in the Great Lakes region. In 1929 the disease was unusually prevalent in some of these areas, especially the East North Central.

Scarlet fever.—Although the usual seasonal increase in scarlet fever was apparent in all sections of the country, the number of cases (15,281) reported for the current 4-week period came closer to the average for previous years than at any time during the current year. States in the North Central groups showed decreases from last year's figure, but in other areas the increases ranged from 11 per cent to 22 per cent.

Smallpox.—The incidence of smallpox maintained the low level which has prevailed throughout the current year. The reported cases for the current 4-week period numbered 1,124, i. e., about 77 per

cent of the cases recorded for the corresponding period last year and considerably less than one-half of the number in 1929.

Areas showing increases over last year were the New England and Middle Atlantic, West North Central, and South Central. In the New England and Middle Atlantic States the disease continued unusually prevalent in Vermont, and during the week ended December 5 there were 39 cases reported in the State of Connecticut. No cases had been reported from Connecticut since 1929. Out of 449 cases reported during the current period from the West North Central group, Iowa reported 249, as compared with 41 in the same period last year. While the number of cases was not high in the South Central States, it represented a 50 per cent increase over the same period last year.

Meningococcus meningitis.—In relation to previous years the incidence of meningococcus meningitis continued considerably below the level of either of the two preceding years for the period involved. The number of cases reported for the four weeks ended December 5 was 279, as compared with 319 cases for the same period last year and 482 cases in 1929. Each geographic area shared in this favorable decrease except the South Atlantic, where, since almost the beginning of the current year, the incidence has been slightly higher than in either 1930 or 1929.

Typhoid fever.—The incidence of typhoid fever continued to decrease during the 4-week period ended December 5. Compared with previous years the incidence (1,967 cases) was about 12 per cent less than that of last year for the same period but was more than 30 per cent in excess of the incidence in 1929. All areas showed considerable decreases in the numbers of cases occurring during the current period as compared with the preceding 4-week period.

Influenza.—The total number of cases (2,593) reported for the 4-week period ended December 5 was about 65 per cent of the number reported for the same period last year and 50 per cent of the number in 1929. All areas shared in this favorable situation except the West North Central. In that group of States 460 cases were reported as compared with 39 for the same period last year and 65 in 1929. Missouri reported 340 of the 460 cases.

Mortality, all causes.—The mortality from all causes in a group of large cities as summarized by the Bureau of the Census was the lowest in six years, viz., 11.1 per thousand population, annual basis.

COURT DECISION RELATING TO PUBLIC HEALTH

Ordinance relative to closing of barber shops held invalid.—(Mississippi Supreme Court; Knight, Chief of Police, *v.* Johns, 137 So. 509; decided Nov. 2, 1931.) By the terms of an ordinance of the city of

Clarksdale it was made unlawful and punishable by fine and imprisonment "for any barber shop in the said city to open for business before 7.30 in the forenoon and/or to remain open for business after the hour of 6.30 in the afternoon, except that, on week days which immediately precede a holiday, said barber shops may remain open for business until 9 o'clock p. m." The ordinance empowered the city health officer to inspect barber shops, and in one section it was declared that the purpose in prescribing the hours of opening and closing was "to promote the general health and sanitary conditions of the said shops, it being apparent that a better inspection may be had and made between the hours prescribed than at any other time."

The appellee, who owned and operated a barber shop in the city, twice violated the ordinance by keeping his shop open after 6.30 p. m. and was twice arrested. He then secured an injunction restraining the chief of police from further arresting him for violating the ordinance. On appeal, one of the reasons assigned for the validity of the ordinance was that it was designed to fix a reasonable time within which the city inspectors could inspect barber shops in order to ascertain whether the city's sanitary and health ordinances were being obeyed. In holding that the ordinance could not be sustained on this ground, the supreme court said:

> The city has the right of inspection reasonably necessary for the enforcement of its health and sanitary ordinances. As we understand the argument, the necessity for the barber-shop-closing ordinance arises because of inconvenience to the city's inspectors of inspecting such shops during the hours the ordinance requires them to be closed. It does not, and could hardly be made to, appear that such inspection must be continuous, covering every hour a barber shop is open; and to compel the closing of barber shops between certain hours, because it will be inconvenient for the city to then inspect them, when they are open at other hours amply sufficient for such inspection, would unnecessarily and unreasonably interfere with the operation thereof.

DEATHS DURING WEEK ENDED DECEMBER 5, 1931

Summary of information received by telegraph from industrial insurance companies for the week ended December 5, 1931, and corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 5, 1931	Corresponding week, 1930
Policies in force	74, 178, 223	75, 098, 994
Number of death claims	12, 885	13, 993
Death claims per 1,000 policies in force, annual rate	9. 1	9. 7
Death claims per 1,000 policies, first 49 weeks of year, annual rate	9. 6	9. 5

Deaths [1] from all causes in certain large cities of the United States during the week ended December 5, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

[The rates furnished in this summary are based upon mid-year population estimates derived from the 1930 census.]

City	Week ended Dec. 5, 1931				Corresponding week, 1930		Death rate [2] for the first 49 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Total (82 cities)	7,404	10.8	559	[4] 44	11.8	731	11.8	11.9
Akron	32	6.3	2	20	2.9	3	7.5	7.7
Albany [5]	42	17.0	3	60	13.9	1	14.0	14.8
Atlanta [6]	65	12.2	2	20	13.4	8	15.0	15.3
White	29	8.2	0	0	8.9	5	11.6	11.4
Colored	36	20.1	2	58	22.4	3	21.7	23.0
Baltimore [5 6]	189	12.1	19	66	15.7	25	14.2	14.0
White	156	12.2	15	67	14.4	15	12.9	12.7
Colored	33	11.7	4	64	21.8	10	19.9	19.9
Birmingham [6]	68	13.2	4	40	15.5	12	13.1	13.6
White	32	10.0	2	34	11.6	3	10.1	10.1
Colored	36	18.3	2	49	21.9	9	18.1	19.3
Boston	206	13.7	9	26	11.7	26	14.1	14.1
Bridgeport	37	13.1	2	34	12.8	5	11.1	10.9
Buffalo	117	10.5	12	54	12.9	22	12.8	12.9
Cambridge	21	9.6	3	62	11.5	1	12.0	11.8
Camden	31	13.6	2	35	11.0	0	14.1	13.4
Canton	14	6.8	1	25	9.9	1	10.0	9.9
Chicago [5]	590	8.9	48	43	11.4	67	10.5	10.4
Cincinnati	128	14.6	7	42	16.0	9	15.7	15.6
Cleveland	168	9.6	17	50	10.6	9	11.1	11.1
Columbus	68	12.0	3	29	12.9	6	13.5	15.3
Dallas [6]	64	12.2	9	----	10.7	8	11.1	11.4
White	48	11.1	8	----	9.6	6	9.8	10.5
Colored	16	17.6	1	----	16.2	2	17.4	16.2
Dayton	47	10.6	6	85	11.8	3	10.5	9.6
Denver	82	14.7	9	91	12.5	7	13.8	14.9
Des Moines	25	9.0	2	38	10.2	0	10.9	11.6
Detroit	222	7.0	24	38	8.5	37	8.1	9.2
Duluth	24	12.3	3	81	14.4	2	11.3	11.5
El Paso	20	9.9	4	----	17.7	4	15.1	17.0
Erie	32	14.2	3	62	5.4	2	10.3	11.0
Fall River [5 7]	27	12.2	1	24	10.0	2	11.1	11.6
Flint	15	4.8	2	25	7.6	4	6.8	9.0
Fort Worth [6]	36	11.2	3	----	14.3	3	10.5	10.9
White	31	11.5	3	----	14.0	3	10.2	10.3
Colored	5	9.6	0	----	15.8	0	12.3	13.5
Grand Rapids	14	4.3	1	15	10.5	3	9.0	10.1
Houston [6]	73	12.3	8	----	13.4	10	11.0	12.1
White	45	10.3	4	----	12.0	5	10.2	10.8
Colored	28	17.6	4	----	17.3	5	13.5	15.9
Indianapolis [6]	88	12.4	5	38	14.3	6	13.6	14.4
White	72	11.6	3	26	13.5	6	13.1	13.5
Colored	16	18.5	2	123	20.0	0	17.1	21.3
Jersey City	59	9.6	8	71	11.0	9	11.2	11.3
Kansas City, Kans. [6]	28	11.9	1	22	11.5	0	12.6	11.7
White	24	12.6	1	27	11.6	0	11.9	11.0
Colored	4	8.9	0	0	11.4	0	15.5	14.9
Kansas City, Mo.	88	11.2	8	64	12.6	4	12.9	13.2
Knoxville [6]	31	14.8	4	87	7.8	2	12.5	13.5
White	27	15.4	4	98	5.3	2	11.7	12.5
Colored	4	11.7	0	0	21.1	0	16.3	18.3
Long Beach	25	8.6	0	0	12.0	4	9.8	10.0
Los Angeles	263	10.4	7	20	11.4	24	10.6	11.0
Louisville [6]	63	10.7	5	45	14.9	12	13.7	13.5
White	45	9.0	3	31	13.4	11	12.3	12.1
Colored	18	19.7	2	143	23.1	1	21.4	21.6
Lowell [7]	31	16.1	1	26	10.4	3	12.8	13.3
Lynn	21	10.7	2	58	10.2	3	9.4	10.3
Memphis [6]	70	14.1	3	32	15.2	6	16.4	16.9
White	34	11.1	1	17	12.3	1	13.4	13.2
Colored	36	19.0	2	58	19.9	5	21.3	22.8
Miami [6]	20	9.3	0	0	13.2	4	11.6	10.9
White	16	9.6	0	0	12.8	4	10.7	9.7
Colored	4	8.2	0	0	14.5	0	14.6	15.3

See footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended December 5, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Dec. 5, 1931				Corresponding week, 1930		Death rate [2] for the first 49 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Milwaukee	91	8.0	5	22	12.2	13	9.1	9.6
Minneapolis	74	8.1	8	51	11.4	10	10.9	10.7
Nashville [6]	41	13.7	3	45	14.5	3	16.7	16.5
White	21	9.7	1	20	8.9	3	14.3	13.9
Colored	20	24.4	2	126	29.2	0	22.9	23.2
New Bedford [7]	25	11.6	1	26	12.0	3	12.1	11.0
New Haven	44	14.1	3	46	6.1	2	12.5	12.6
New Orleans [6]	122	13.6	15	84	17.2	20	16.6	17.3
White	72	11.3	8	68	14.0	14	13.5	14.3
Colored	50	19.4	7	116	25.3	6	24.1	24.9
New York	1,306	9.6	89	38	10.7	134	11.0	10.7
Bronx Borough	185	7.3	9	26	7.3	12	8.1	7.8
Brooklyn Borough	445	8.8	32	34	10.0	49	10.1	9.8
Manhattan Borough	495	14.2	39	52	15.6	55	16.5	15.9
Queens Borough	145	6.6	5	20	8.1	17	7.1	7.0
Richmond Borough	36	11.5	4	76	9.2	1	13.5	13.8
Newark, N. J	103	12.1	14	74	12.5	8	11.5	12.0
Oakland	78	13.9	2	25	11.5	1	10.7	11.0
Oklahoma City	41	10.9	5	70	15.8	8	10.6	10.9
Omaha	70	16.8	7	81	9.7	6	13.8	13.5
Paterson	31	11.6	3	51	13.5	1	13.2	12.1
Peoria	20	9.6	1	26	10.9	4	12.4	12.2
Philadelphia	477	12.6	36	52	13.7	55	12.9	12.6
Pittsburgh	163	12.6	13	45	13.6	12	14.3	13.8
Portland, Oreg	74	12.6	1	12	10.5	4	11.6	12.1
Providence	53	10.8	4	37	12.6	1	12.6	12.8
Richmond [6]	41	11.6	7	102	17.6	3	15.3	14.8
White	17	6.7	3	66	17.2	2	12.9	12.2
Colored	24	23.7	4	173	18.7	1	21.4	21.3
Rochester	64	10.1	4	37	8.6	3	11.7	11.5
St. Louis	191	12.0	12	43	12.9	10	14.8	14.0
St. Paul	64	12.1	7	72	10.0	1	10.4	10.1
Salt Lake City [4]	31	11.3	2	30	14.1	5	12.0	12.5
San Antonio	72	15.6	8	.....	15.2	10	14.1	15.8
San Diego	57	19.0	0	0	16.7	3	13.6	14.5
San Francisco	163	13.1	7	47	12.1	1	12.9	13.0
Schenectady	27	14.6	0	0	9.3	1	10.8	11.1
Seattle	91	12.8	0	0	10.8	3	11.3	10.8
Somerville	17	8.4	1	31	8.0	2	8.7	9.6
South Bend	14	6.8	2	52	9.9	2	8.0	9.0
Spokane	26	11.7	2	52	14.9	3	12.4	12.5
Springfield, Mass	23	7.9	0	0	11.1	2	11.4	12.0
Syracuse	41	10.0	5	61	11.9	4	11.5	11.6
Tacoma	33	16.0	0	0	7.8	1	12.3	12.4
Toledo	71	12.5	8	75	14.5	7	11.8	12.6
Trenton	36	15.2	2	37	24.5	4	16.2	16.6
Utica	23	11.7	0	0	8.7	2	14.2	14.6
Washington, D. C. [5]	156	16.6	20	111	15.0	13	15.9	15.2
White	85	12.4	5	41	13.4	9	13.6	13.1
Colored	71	27.4	15	256	19.2	4	22.1	20.8
Waterbury	16	8.3	3	75	12.5	1	9.6	9.5
Wilmington, Del. [7]	15	7.3	0	0	11.7	2	13.7	14.4
Worcester	39	10.3	4	87	10.9	3	12.0	12.6
Yonkers	10	3.8	0	0	4.6	1	8.3	8.1
Youngstown	26	7.8	2	28	9.2	2	9.9	10.3

[1] Deaths of nonresidents are included. Stillbirths are excluded.
[2] These rates represent annual rates per 1,000 population, as estimated for 1931 and 1930 by the arithmetical method.
[3] Deaths under 1 year of age per 1,000 live births. Cities left blank are not in the registration area for births.
[4] Data for 77 cities.
[5] Deaths for week ended Friday.
[6] For the cities for which deaths are shown by color, the percentages of colored population in 1930 were as follows: Atlanta, 33; Baltimore, 18; Birmingham, 38; Dallas, 17; Fort Worth, 16; Houston, 27; Indianapolis, 12; Kansas City, Kans., 19; Knoxville, 16; Louisville, 15; Memphis, 38; Miami, 23; Nashville, 28; New Orleans, 29; Richmond, 29; and Washington, D. C., 27.
[7] Population Apr. 1, 1930; decreased 1920 to 1930, no estimate made.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended December 12, 1931, and December 13, 1930

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 12, 1931, and December 13, 1930

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930
New England States:								
Maine	7	4	----	1	264	24	0	0
New Hampshire	7	2	----	----	5	----	0	0
Vermont	1	5	----	----	87	11	0	0
Massachusetts	66	93	5	9	180	232	2	2
Rhode Island	7	16	3	----	338	2	0	0
Connecticut	5	17	3	1	53	105	1	3
Middle Atlantic States:								
New York	124	97	[1] 11	[1] 13	401	209	8	17
New Jersey	44	70	11	16	34	118	6	2
Pennsylvania	120	138	----	----	625	381	10	3
East North Central States:								
Ohio	118	98	22	25	124	57	2	5
Indiana	72	71	22	2	30	119	6	4
Illinois	161	179	73	29	34	253	5	11
Michigan	52	81	11	1	87	89	4	7
Wisconsin	23	17	19	21	57	206	1	3
West North Central States:								
Minnesota	26	15	1	----	11	11	0	1
Iowa	21	7	----	----	2	5	1	0
Missouri	90	53	7	9	5	554	1	10
North Dakota	30	5	----	----	16	5	0	0
South Dakota	8	5	----	----	125	2	0	2
Nebraska	17	15	----	----	22	1	0	2
Kansas	75	34	----	----	24	2	1	2
South Atlantic States:								
Delaware	14	3	----	2	2	----	0	0
Maryland [2]	70	40	16	22	6	8	0	1
District of Columbia [2]	15	19	2	----	2	3	1	0
Virginia	----	----	----	----	----	----	1	----
West Virginia	53	27	5	32	286	12	1	2
North Carolina [2]	87	89	32	26	19	44	3	3
South Carolina	13	29	406	625	13	----	0	4
Georgia [2]	32	52	67	88	2	37	1	1
Florida [2]	16	15	2	----	2	12	1	0

[1] New York City only.
[2] Week ended Friday.
[3] Typhus fever, 1931, 8 cases: 1 case in District of Columbia, 1 case in North Carolina, 2 cases in Georgia, 3 cases in Florida, and 1 case in Alabama.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 12, 1931, and December 13, 1930—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930
East South Central States:								
Kentucky	94	17					4	1
Tennessee	66	29	37	60	8	51	3	3
Alabama [3]	84	82	21	52	18	148	3	6
Mississippi	51	29					0	1
West South Central States:								
Arkansas	30	12	11	29	13	2	1	0
Louisiana	37	38	27	5		3	0	5
Oklahoma [4]	97	59	47	45	1	30	0	0
Texas	266	56	14	53	3	54	2	0
Mountain States:								
Montana	1	2	1		177		0	0
Idaho	1					5	0	2
Wyoming	7	1		6	1		0	1
Colorado	2	11			3	49	1	3
New Mexico	14	9			3	38	0	0
Arizona	14	4	7	5	4	59	2	3
Utah [3]	2	2	3	8	4	1	1	2
Pacific States:								
Washington	5	12			57	22	1	2
Oregon	1	10	18	17	12	29	0	2
California	81	56	105	50	146	221	8	5

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930
New England States:								
Maine	0	2	44	15	0	0	3	4
New Hampshire	0	0	15	2	0	0	0	0
Vermont	2	0	8	7	7	0	0	1
Massachusetts	7	6	300	236	0	0	3	9
Rhode Island	1	0	18	33	0	0	0	0
Connecticut	4	0	48	59	15	0	1	5
Middle Atlantic States:								
New York	11	4	432	511	40	9	25	26
New Jersey	3	0	111	182	0	0	4	2
Pennsylvania	7	1	414	451	1	0	26	34
East North Central States:								
Ohio	2	11	516	547	13	53	19	23
Indiana	1	1	143	189	8	71	12	4
Illinois	13	5	367	388	19	36	19	27
Michigan	3	3	188	228	14	34	5	13
Wisconsin	5	2	89	121	10	18	1	3
West North Central States:								
Minnesota	8	2	40	71	6	11	1	1
Iowa	3	4	47	53	41	14	1	1
Missouri	2	0	74	93	6	5	4	4
North Dakota	0	0	22	25	2	5	1	1
South Dakota	0	4	16	11	10	12	1	1
Nebraska	0	3	27	38	6	7	2	1
Kansas	1	3	68	51	5	25	3	2
South Atlantic States:								
Delaware	0	0	7	22	0	0	1	0
Maryland [3]	1	0	109	76	0	0	6	9
District of Columbia [3]	0	0	21	29	0	0	1	0
Virginia								
West Virginia	0	0	46	57	4	23	21	15
North Carolina [3]	0	1	85	82	0	1	6	3
South Carolina	0	0	15	20	0	0	9	24
Georgia [3]	1	0	35	49	2	0	14	9
Florida [3]	0	0	9	5	2	1	3	0

[3] Week ended Friday.

[5] Typhus fever, 1931, 8 cases: 1 case in District of Columbia, 1 case in North Carolina, 2 cases in Georgia, 3 cases in Florida, and 1 case in Alabama.

[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 12, 1931, and December 13, 1930—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930	Week ended Dec. 12, 1931	Week ended Dec. 13, 1930
East South Central States:								
Kentucky	2	0	78	25	0	8	16	1
Tennessee	0	1	53	51	3	2	14	3
Alabama [3]	8	0	60	86	0	0	28	22
Mississippi	0	0	24	33	4	1	6	10
West South Central States:								
Arkansas	0	2	23	17	7	0	14	16
Louisiana	0	0	22	24	3	14	33	20
Oklahoma [4]	3	2	38	34	2	21	11	9
Texas	0	3	71	47	7	16	20	6
Mountain States:								
Montana	3	0	47	42	1	14	0	2
Idaho	0	0	5	1	0	1	0	0
Wyoming	0	0	11	21	0	0	0	1
Colorado	0	2	40	62	0	4	2	1
New Mexico	0	1	9	11	0	2	9	16
Arizona	0	0	5	5	0	0	0	4
Utah [3]	0	0	12	6	0	0	0	0
Pacific States:								
Washington	3	1	66	45	15	25	7	5
Oregon	0	1	18	22	6	19	6	4
California	3	15	163	99	5	46	10	4

[3] Week ended Friday.
[2] Typhus fever, 1931, 8 cases: 1 case in District of Columbia, 1 case in North Carolina, 2 cases in Georgia, 3 cases in Florida, and 1 case in Alabama.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
October, 1931										
Kansas	5	217	4	2	59	----	2	275	11	45
November, 1931										
District of Columbia	2	60	2	----	9	----	0	92	0	14
Iowa	7	83	----	----	13	----	37	201	258	16
Maine	2	17	4	----	782	----	13	139	0	16
Massachusetts	12	243	19	4	390	5	56	906	0	15
Nebraska	----	93	16	----	42	----	4	108	29	5
New Hampshire	----	21	----	----	----	----	2	23	----	1
Vermont	----	30	----	----	141	----	8	58	75	0
Wyoming	----	----	----	----	6	----	0	31	2	1

October, 1931

Kansas:	Cases
Actinomycosis	1
Chicken pox	175
German measles	4
Impetigo contagiosa	22
Mumps	88
Ptomaine poisoning	1
Scabies	23
Septic sore throat	4
Tetanus	1
Trench mouth	1
Tularaemia	1
Undulant fever	2
Vincent's angina	10
Whooping cough	62

November, 1931

Anthrax:	
Massachusetts	1
Nebraska	1
Chicken pox:	
District of Columbia	22
Iowa	363
Maine	193
Massachusetts	488
Nebraska	165
Vermont	253
Wyoming	31
Conjunctivitis:	
Maine	2
Dysentery:	
Iowa	1
Massachusetts	5
German measles:	
Iowa	6
Massachusetts	66
Impetigo contagiosa:	
Iowa	3
Lead poisoning:	
Massachusetts	6
Lethargic encephalitis:	
Massachusetts	3
Mumps:	
Iowa	14
Maine	10
Massachusetts	627
Nebraska	43
Vermont	53
Wyoming	20
Ophthalmia neonatorum:	
Massachusetts	96
Rabies in animals:	
Vermont	1
Septic sore throat:	
Iowa	1
Maine	2
Massachusetts	21
Tetanus:	
Maine	1
Trachoma:	
Massachusetts	5
Trichinosis:	
Massachusetts	2
Undulant fever:	
Iowa	7
Massachusetts	8
Vermont	1
Vincent's angina:	
Iowa	8
Maine	4
Whooping cough:	
District of Columbia	67
Iowa	111
Maine	80
Massachusetts	474
Nebraska	52
Vermont	277
Wyoming	18

ADMISSIONS TO HOSPITALS FOR THE INSANE, AUGUST, 1929

Reports for the month of August, 1929, showing new admissions to hospitals for the care and treatment of the insane, were received by the Public Health Service from 115 hospitals, located in 39 States, the District of Columbia, and the Territory of Hawaii. The 115 hospitals had 180,155 patients on August 31, 1929—95,488 males and 84,667 females, 113 males per 100 females.

The following table shows the number of new admissions for the month of August, 1929, by psychoses:

Psychoses	Number of first admissions		
	Male	Female	Total
1. Traumatic psychoses	17	2	19
2. Senile psychoses	165	145	310
3. Psychoses with cerebral arteriosclerosis	186	127	313
4. General paralysis	236	75	311
5. Psychoses with cerebral syphilis	22	10	32
6. Psychoses with Huntington's chorea	1	2	3
7. Psychoses with brain tumor	1	1	2
8. Psychoses with other brain or nervous disease	27	11	38
9. Alcoholic psychoses	125	12	137
10. Psychoses due to drugs and other exogenous toxins	16	9	25
11. Psychoses with pellagra	12	24	36
12. Psychoses with other somatic diseases	43	55	98
13. Manic-depressive psychoses	174	243	417
14. Involution melancholia	18	48	66
15. Dementia præcox (schizophrenia)	310	286	596
16. Paranoia and paranoid conditions	28	30	58
17. Epileptic psychoses	42	29	71
18. Psychoneuroses and neuroses	22	52	74
19. Psychoses with psychopathic personality	23	9	32
20. Psychoses with mental deficiency	63	63	126
21. Undiagnosed psychoses	164	103	267
22. Without psychosis	184	46	230
Total	1,879	1,382	3,261

During the month of August, 1929, there were 3,261 new admissions to the hospitals, 57.6 per cent of these being males and 42.4 per cent females—136 males per 100 females. Four hundred and ninety-seven of the new admissions were reported as undiagnosed or "without psychosis." There were 2,764 new admissions for whom a provisional diagnosis was made. Of these 2,764 patients, cases of dementia præcox constituted 21.6 per cent; manic-depressive psychoses, 15.1 per cent; psychoses with cerebral arteriosclerosis, 11.3 per cent; general paralysis, 11.3 per cent; and senile psychoses, 11.2 per cent. These five classes accounted for 70.4 per cent of the new admissions for which a diagnosis was given.

The following table shows the number of patients in the hospitals and on parole on August 31, 1929:

	Total patients on books		
	Male	Female	Total
Total patients on books last day of month:			
In hospitals	85,443	76,644	162,087
On parole or otherwise absent, but still on books	10,045	8,023	18,068
Total	95,488	84,667	180,155

Of the 180,155 patients, 10,045 males and 8,023 females were on parole or otherwise absent but still on the books at the end of the month—10.5 per cent of the males, 9.5 per cent of the females, and 10.0 per cent of the total number of patients.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 33,360,000. The estimated population of the 89 cities reporting deaths is more than 31,815,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 5, 1931, and December 6, 1930

	1931	1930	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	2,288	1,666	----
96 cities	643	560	1,016
Measles:			
45 States	2,796	2,896	----
96 cities	721	894	----
Meningococcus meningitis:			
46 States	81	105	----
96 cities	41	37	----
Poliomyelitis:			
46 States	94	108	----
Scarlet fever:			
46 States	3,766	3,889	----
96 cities	1,145	1,270	1,083
Smallpox:			
46 States	316	616	----
96 cities	33	44	23
Typhoid fever:			
46 States	416	407	----
96 cities	47	63	41
Deaths reported			
Influenza and pneumonia:			
89 cities	585	650	----
Smallpox:			
89 cities	0	0	----

City reports for week ended December 5, 1931

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1922 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	8	1	2		0	21	0	1
New Hampshire:								
Concord	0	0	0		0	0	0	1
Nashua	0	0	0		0	0	1	0
Vermont:								
Barre	0	0	0		0	1	0	0
Burlington	3	1	0		0	10	0	0
Massachusetts:								
Boston	64	38	17	1	0	3	10	17
Fall River	9	4	2		0	1	1	3
Springfield	7	5	0		0	4	8	1
Worcester	8	6	0		0	1	61	1
Rhode Island:								
Pawtucket	0	2	0		0	0	0	0
Providence	4	9	1	2	0	169	12	2
Connecticut:								
Bridgeport	2	5	0	3	1	0	0	5
Hartford	4	6	2		0	0	16	2
New Haven	16	1	0	4	0	0	7	5
MIDDLE ATLANTIC								
New York:								
Buffalo	47	15	6	1	1	2	0	12
New York	138	173	92	21	3	43	25	120
Rochester	17	4	0		0	20	8	4
Syracuse	11	2	0		0	3	4	2
New Jersey:								
Camden	3	7	5	2	0	0	0	7
Newark	22	16	2	3	0	0	8	7
Trenton	6	2	2		0	0	4	1
Pennsylvania:								
Philadelphia	118	60	6	6	3	2	20	40
Pittsburgh	64	22	7	1	3	177	52	18
Reading	20	2	0		0	1	0	2
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	16	12	12		1	0	0	12
Cleveland	171	38	4	6	1	23	82	17
Columbus	22	7	8		0	3	6	1
Toledo	79	8	6		0	1	0	5
Indiana:								
Fort Wayne	2	5	11		0	0	0	0
Indianapolis	69	12	6		2	4	53	10
South Bend	2	2	0		0	0	0	0
Terre Haute	9	1	2		0	0	0	2
Illinois:								
Chicago	106	121	74	5	5	15	9	33
Peoria	14	2	6		0	0	1	1
Springfield	2	2	3		0	0	1	1
Michigan:								
Detroit	44	60	30	2	1	1	2	17
Flint	24	3	1		0	3	12	0
Grand Rapids	21	1	0		0	1	5	0

City reports for week ended December 5, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—Con.								
Wisconsin:								
Kenosha	4	1	0		0	0	2	0
Madison	8	1	7			1	1	
Milwaukee	77	15	4		0	1	16	0
Racine	41	2	0		0	0	26	0
Superior	2	1	0		0	0	8	0
WEST NORTH CENTRAL								
Minnesota:								
Duluth	19	0	0		0	0	0	1
Minneapolis	74	20	14		1	1	39	4
St. Paul	17	7	1	1	1	0	4	3
Iowa:								
Davenport	3	1	1			0	0	
Des Moines	1	2	6			0	0	
Sioux City	18	1	4			1	1	
Waterloo	12	0	1			0	0	
Missouri:								
Kansas City	30	8	9		0	1	0	6
St. Joseph	6	2	6		0	1	1	2
St. Louis	23	43	38			3	2	3
North Dakota:								
Fargo	23	0	0		0	0	0	1
Grand Forks	4	0	0			0	0	
South Dakota:								
Aberdeen	20	0	0			37	0	
Sioux Falls	0	0	0			0	0	
Nebraska:								
Omaha	30	9	31		0	2	5	5
Kansas:								
Topeka	7	1	1		0	1	0	3
Wichita	15	2	11		0	4	0	2
SOUTH ATLANTIC								
Delaware:								
Wilmington	1	2	0		0	0	1	0
Maryland:								
Baltimore	71	24	10	4	0	4	26	18
Cumberland	12	0	0		0	1	0	0
Frederick	0	0	0		0	0	0	1
District of Columbia:								
Washington	4	18	20	1	1	2	0	16
Virginia:								
Lynchburg		4						
Norfolk	5	3	4		0	0	0	0
Richmond	4	14	21		0	0	0	4
Roanoke	8	3	6		0	0	0	0
West Virginia:								
Charleston	7	2	6		0	0	0	3
Huntington	0		2		0	0	0	0
Wheeling	3	1	0		0	0	0	2
North Carolina:								
Raleigh	1	2	4		0	15	0	1
Wilmington	0	2	0		0	0	0	2
Winston-Salem	13	3	2		0	0	0	2
SouthCarolina:								
Charleston	1	1	2	25	0	0	0	2
Columbia	0	1	1		0	0	0	14
Greenville	1	0	0		0	0	0	0
Georgia:								
Atlanta	18	7	5	5	0	0	1	7
Brunswick	0	0	0		0	0	3	0
Savannah	0	2	1	31	1	0	0	1
Florida:								
Miami	0	2	2		0	0	0	1
Tampa	0	2	1		0	0	0	0

City reports for week ended December 5, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	1	0		0	0	0	0
Lexington	1		1		0	0	1	0
Louisville	6		2		0	0	0	4
Tennessee:								
Memphis	2	8	15		1	1	1	4
Nashville	0	3	4		3	0	0	2
Alabama:								
Birmingham	1	7	8		1	2	0	9
Mobile	0	1	0		1	0	0	0
Montgomery	1	2	1	4		3	4	
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	0	1	3			0	0	
Little Rock	1	1	7		0	0	1	2
Louisiana:								
New Orleans	0	15	10	1	0	0	0	12
Shreveport	7	1	2		0	7	0	4
Oklahoma:								
Muskogee	1		5		0	0	0	0
Texas:								
Dallas	2	18	17	1	1	0	0	9
Fort Worth	1	11	21		0	0	0	5
Galveston	0	1	5		0	0	0	2
Houston	0	10	28		0	1	0	7
San Antonio	0	5	0		1	0	0	3
MOUNTAIN								
Montana:								
Billings	0	0	0		0	69	0	0
Great Falls	0	0	0		0	1	0	0
Helena	1	0	0		0	14	0	0
Missoula	0	0	0		0	0	0	0
Idaho:								
Boise	0	0	0		0	0	0	1
Colorado:								
Denver	35	10	6		1	3	0	3
Pueblo	16	1	0		0	0	0	1
New Mexico:								
Albuquerque	7	1	0		0	1	1	1
Arizona:								
Phoenix	0	0	1		0	1	0	1
Utah:								
Salt Lake City	90	4	0		0	0	3	3
Nevada:								
Reno	0	0	0		0	0	0	1
PACIFIC								
Washington:								
Seattle	79	5	5			32	22	
Spokane	8	2	0			1	0	
Tacoma	19	3	3		0	0	2	3
Oregon:								
Portland	28	11	0	4	0	5	16	3
Salem	6	1	0	7	0	0	2	0
California:								
Los Angeles	31	38	33	41	5	8	11	11
Sacramento	3	3	1	1	1	44	0	8
San Francisco	62	14	3	9	2	7	3	10

City reports for week ended December 5, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	3	12	0	0	0	1	0	0	0	4	27
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	18
Nashua	0	0	0	0	0	0	0	0	0	1	----
Vermont:											
Barre	0	0	0	0	0	2	0	0	0	3	5
Burlington	1	0	0	0	0	1	0	0	0	0	7
Massachusetts:											
Boston	64	60	0	0	0	14	2	1	0	28	206
Fall River	3	5	0	0	0	1	0	0	0	1	27
Springfield	5	2	0	0	0	0	0	0	1	6	29
Worcester	12	26	0	0	0	3	0	0	0	11	39
Rhode Island:											
Pawtucket	1	0	0	0	0	0	0	0	0	0	----
Providence	11	9	0	0	0	4	0	0	0	3	53
Connecticut:											
Bridgeport	6	4	0	23	0	2	0	1	0	0	37
Hartford	6	2	0	0	0	0	0	0	0	4	41
New Haven	3	1	0	0	0	0	0	0	0	8	44
MIDDLE ATLANTIC											
New York:											
Buffalo	22	24	0	1	0	8	1	1	0	36	115
New York	124	114	0	0	0	83	14	6	2	93	1,306
Rochester	8	37	0	0	0	2	0	0	0	9	57
Syracuse	9	23	0	0	0	0	0	0	0	57	41
New Jersey:											
Camden	4	5	0	0	0	1	0	0	0	0	31
Newark	13	17	0	0	0	8	0	0	0	32	103
Trenton	3	3	0	0	0	7	0	[1] 2	0	1	36
Pennsylvania:											
Philadelphia	69	71	0	0	0	31	3	1	0	120	477
Pittsburgh	39	53	0	1	0	5	0	2	1	25	163
Reading	0	0	0	0	0	1	0	0	0	2	29
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	17	49	0	0	0	11	1	0	0	2	128
Cleveland	34	54	0	0	0	21	1	0	0	126	168
Columbus	10	20	0	0	0	2	0	0	0	5	68
Toledo	12	8	1	0	0	1	1	5	0	47	71
Indiana:											
Fort Wayne	3	1	0	0	0	1	0	0	0	0	27
Indianapolis	14	8	3	0	0	5	0	0	0	9	----
South Bend	3	2	0	0	0	0	0	0	0	1	14
Terre Haute	3	1	0	0	0	0	0	0	0	0	19
Illinois:											
Chicago	109	125	0	0	0	37	3	3	0	144	590
Peoria	----	5	----	0	0	1	----	0	0	11	20
Springfield	2	11	0	0	0	0	0	0	0	8	27
Michigan:											
Detroit	82	73	0	0	0	20	1	3	0	46	222
Flint	11	4	1	0	0	2	0	0	0	20	15
Grand Rapids	10	6	1	0	0	0	0	0	0	2	14
Wisconsin:											
Kenosha	0	4	1	0	0	0	0	0	0	5	6
Madison	2	1	1	0	----	----	0	0	----	0	----
Milwaukee	19	16	0	0	0	0	1	0	0	93	91
Racine	5	3	0	0	0	2	0	0	0	0	13
Superior	3	0	0	0	0	0	0	0	0	0	5

[1] Nonresidents.

City reports for week ended December 5, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL											
Minnesota:											
Duluth	9	1	0	0	0	0	0	1	0	0	24
Minneapolis	41	14	1	0	0	2	0	0	0	15	74
St. Paul	17	16	0	0	0	1	0	0	0	3	73
Iowa:											
Davenport	1	2	2	0	----	----	0	0	----	0	----
Des Moines	9	10	2	0	----	----	0	0	----	0	25
Sioux City	2	1	0	1	----	----	0	0	----	7	----
Waterloo	3	1	0	0	----	----	0	1	----	11	----
Missouri:											
Kansas City	14	19	0	0	0	4	0	0	0	6	88
St. Joseph	3	1	0	0	0	0	0	0	1	3	29
St. Louis	36	15	0	0	0	11	2	0	0	51	191
North Dakota:											
Fargo	2	4	0	0	0	0	0	0	0	4	10
Grand Forks	1	1	0	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	0	2	0	0	----	----	0	0	----	5	----
Sioux Falls	1	0	0	0	----	----	0	0	----	0	7
Nebraska:											
Omaha	7	9	2	0	0	2	0	0	0	1	70
Kansas:											
Topeka	2	3	1	0	0	0	0	0	0	6	13
Wichita	4	0	0	1	0	1	0	0	0	0	31
SOUTH ATLANTIC											
Delaware:											
Wilmington	2	0	0	0	0	0	0	0	0	4	15
Maryland:											
Baltimore	22	18	0	0	0	10	2	3	0	101	189
Cumberland	1	4	0	0	0	0	0	0	0	2	12
Frederick	0	2	0	0	0	0	0	0	0	0	4
District of Columbia:											
Washington	18	16	0	0	0	9	1	0	0	14	156
Virginia:											
Lynchburg	1	----	0	----	----	----	0	----	----	----	----
Norfolk	3	11	0	0	0	1	0	0	0	0	----
Richmond	8	20	0	0	0	3	0	0	0	2	49
Roanoke	4	2	0	0	0	0	0	0	1	1	13
West Virginia:											
Charleston	2	1	0	0	0	0	0	[1]2	1	3	22
Huntington	----	6	----	0	0	0	----	0	0	0	----
Wheeling	2	1	0	0	0	1	0	0	0	4	20
North Carolina:											
Raleigh	3	1	0	0	0	0	0	0	0	3	11
Wilmington	1	0	0	0	0	1	0	0	0	4	13
Winston-Salem	2	2	1	0	0	1	0	0	0	7	15
South Carolina:											
Charleston	2	1	0	0	0	3	0	0	0	0	20
Columbia	1	0	0	0	0	1	0	0	1	0	61
Greenville	0	1	0	0	0	0	0	0	0	0	----
Georgia:											
Atlanta	6	12	0	0	0	6	0	0	0	0	65
Brunswick	0	0	0	0	0	1	0	0	0	0	5
Savannah	1	2	0	0	0	0	1	0	0	0	30
Florida:											
Miami	1	0	0	0	0	2	0	0	0	0	20
Tampa	1	5	0	0	0	0	0	3	0	0	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington	4	2	0	0	0	0	0	0	0	0	12
Lexington	----	2	----	0	0	0	----	0	0	1	15
Louisville	----	16	----	0	0	2	----	0	0	14	63
Tennessee:											
Memphis	7	8	1	0	0	6	2	1	1	20	70
Nashville	4	3	0	0	0	3	1	0	0	7	41
Alabama:											
Birmingham	4	6	0	0	0	3	1	1	0	1	68
Mobile	1	3	0	0	0	4	0	0	0	0	31
Montgomery	0	0	0	0	----	----	0	0	----	0	----

[1] Nonresident.

City reports for week ended December 5, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	1	0	0	----	----	0	0	----	2	----
Little Rock	3	3	0	0	0	0	0	1	0	0	2
Louisiana:											
New Orleans	9	9	0	0	0	4	2	5	2	0	122
Shreveport	2	2	0	0	0	1	0	0	1	3	30
Oklahoma:											
Muskogee	----	0	----	0	0	0	----	0	0	0	----
Texas:											
Dallas	9	10	1	0	0	5	0	0	0	8	64
Fort Worth	2	8	0	1	0	3	0	1	1	0	36
Galveston	0	0	0	0	0	1	0	0	0	0	25
Houston	3	5	1	1	0	3	0	1	0	0	73
San Antonio	1	2	1	0	0	7	0	1	0	0	72
MOUNTAIN											
Montana:											
Billings	1	0	0	0	0	0	0	2	0	2	3
Great Falls	2	2	0	0	0	0	0	0	0	0	7
Helena	1	0	0	0	0	0	0	0	0	1	7
Missoula	1	1	0	0	0	0	0	0	0	0	10
Idaho:											
Boise	1	0	0	0	0	0	0	0	0	0	8
Colorado:											
Denver	13	19	0	0	0	5	0	0	0	7	80
Pubelo	1	1	0	0	0	0	0	1	0	4	7
New Mexico:											
Albuquerque	1	1	0	0	0	3	0	4	0	0	11
Arizona:											
Phoenix	1	0	0	0	0	2		0	0	0	----
Utah:											
Salt Lake City	2	2	1	0	0	0	0	0	0	0	31
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	6
PACIFIC											
Washington:											
Seattle	10	15	1	0	----	----	1	0	----	8	----
Spokane	8	0	3	2	----	----	0	1	----	4	----
Tacoma	4	4	1	0	0	1	0	0	0	3	33
Oregon:											
Portland	8	1	3	1	0	1	1	0	0	1	74
Salem	1	0	0	0	0	0	0	0	0	1	----
California:											
Los Angeles	27	27	1	0	0	11	1	2	0	18	263
Sacramento	3	0	1	0	0	2	0	1	0	0	32
San Francisco	15	5	0	3	0	7	0	1	0	9	155

City reports for week ended December 5, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	1	0
Massachusetts:									
Boston	0	0	0	0	0	0	2	3	0
Fall River	1	1	0	0	0	0	0	0	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York [1]	7	3	1	0	0	0	2	3	0
Syracuse	0	1	0	0	0	0	0	0	0
New Jersey:									
Newark	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	3	2	1	1	0	0	0	1	0
Pittsburgh	3	1	0	0	0	0	0	1	1
EAST NORTH CENTRAL									
Indiana:									
Indianapolis	13	3	0	0	0	0	0	0	0
Illinois [1]									
Chicago	2	0	1	0	0	0	1	0	0
Michigan:									
Detroit	2	0	0	1	0	0	0	0	0
Wisconsin:									
Milwaukee	0	0	0	0	0	0	0	1	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	1	0
Minneapolis	1	0	0	0	0	0	0	1	0
St. Paul	0	0	0	0	0	0	0	2	0
Iowa:									
Des Moines	0	0	0	0	0	0	0	1	0
Waterloo	1	0	0	0	0	0	0	0	0
Missouri:									
Kansas City	0	1	0	0	1	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	0	1	0	0	1	1	0
District of Columbia:									
Washington	1	1	0	0	0	0	0	1	0
North Carolina:									
Winston-Salem	0	0	0	0	1	0	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	3	0	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia: [1]									
Savannah [1]	0	0	0	0	3	0	0	0	0
Florida:									
Miami	0	0	0	0	2	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	1	1	0	0	0	0	0	0	0
Tennessee:									
Memphis	0	2	0	0	0	1	0	0	0
Nashville	1	1	0	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	1	1	0	0	0

[1] Typhus fever, 8 cases: 1 case at New York City, N. Y., 1 case at Springfield, Ill., 3 cases at Charleston, S. C., 1 case at Atlanta, Ga., and 2 cases at Savannah, Ga.

City reports for week ended December 5, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	1	1	1	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
Galveston	0	0	0	0	0	2	0	0	0
Houston	0	1	0	0	0	1	0	1	0
MOUNTAIN									
Utah:									
Salt Lake City	1	2	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	3	0	0	0	0	0	0	0	0
Spokane	0	0	0	0	0	0	0	1	0
Tacoma	0	0	0	0	0	0	0	1	0
California:									
Los Angeles	1	0	0	0	1	0	1	0	0
San Francisco	2	2	0	0	0	0	1	3	0

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended December 5, 1931, compared with those for a like period ended December 6, 1930. The population figures used in computing the rates are estimated mid-year populations for 1930 and 1931, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 33,000,000. The 91 cities reporting deaths have more than 31,500,000 estimated population.

Summary of weekly reports from cities, November 1 to December 5, 1931—Annual rates per 100,000 population compared with rates for the corresponding period of 1930[1]

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 7, 1931	Nov. 8, 1930	Nov. 14, 1931	Nov. 15, 1930	Nov. 21, 1931	Nov. 22, 1930	Nov. 28, 1931	Nov. 29, 1930	Dec. 5, 1931	Dec. 6, 1930
98 cities	94	[3] 82	96	89	96	100	[3] 85	87	[4] 101	[4] 90
New England	84	85	50	82	70	123	67	67	58	121
Middle Atlantic	32	33	52	44	53	52	58	48	54	58
East North Central	97	109	80	128	91	124	[6] 72	122	94	112
West North Central	155	[3] 77	184	107	174	110	[7] 151	110	222	101
South Atlantic	182	86	146	120	172	154	144	66	[4] 159	112
East South Central	268	215	227	185	169	275	145	138	163	143
West South Central	203	199	233	160	206	171	[3] 207	153	244	[3] 147
Mountain	44	123	61	26	17	26	[9] 27	79	52	18
Pacific	100	93	127	63	98	63	67	95	88	65

MEASLES CASE RATES

98 cities	44	[3] 59	55	91	85	126	[3] 91	107	[4] 114	[3] 142
New England	161	128	238	172	233	179	315	162	481	220
Middle Atlantic	27	34	38	68	92	76	82	69	111	85
East North Central	18	16	18	17	29	31	[6] 15	28	31	28
West North Central	15	[3] 282	17	502	19	767	[7] 15	649	27	953
South Atlantic	12	48	10	26	34	64	28	44	[4] 44	62
East South Central	12	84	12	18	29	149	35	66	35	155
West South Central	27	0	24	0	10	3	[8] 24	10	27	[8] 11
Mountain	444	229	400	308	757	326	[9] 1,277	282	757	53
Pacific	104	24	135	32	149	28	123	10	180	26

SCARLET FEVER CASE RATES

98 cities	169	[3] 169	170	187	187	195	[3] 156	174	[4] 179	[4] 202
New England	202	225	221	276	260	237	262	264	293	268
Middle Atlantic	134	133	131	126	163	159	147	148	155	178
East North Central	239	231	215	287	241	263	[6] 171	221	229	257
West North Central	140	[3] 140	149	143	132	219	[7] 123	139	161	198
South Atlantic	190	158	239	154	259	216	176	188	[4] 175	230
East South Central	99	293	198	275	145	209	122	215	128	299
West South Central	95	91	122	118	78	94	[8] 93	132	108	[8] 92
Mountain	252	282	313	388	218	282	[9] 198	229	218	141
Pacific	121	95	96	99	129	87	108	83	100	97

SMALLPOX CASE RATES

98 cities	3	[3] 2	1	4	1	3	[3] 3	8	[4] 5	[8] 7
New England	0	0	0	0	0	0	0	0	55	0
Middle Atlantic	0	0	0	0	0	0	0	0	1	0
East North Central	0	4	0	2	0	0	[6] 0	4	0	1
West North Central	11	[3] 6	4	21	10	23	[7] 13	68	4	48
South Atlantic	0	0	0	0	0	0	0	0	[4] 0	0
East South Central	12	0	6	0	0	0	6	0	0	0
West South Central	3	7	3	3	0	3	[8] 21	3	3	[8] 4
Mountain	0	9	9	0	0	44	[9] 0	35	0	106
Pacific	6	6	4	18	6	6	6	8	10	10

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1931, and 1930, respectively.
[3] Waterloo, Iowa, not included.
[4] South Bend, Ind., St. Paul, Minn., Fort Smith, Ark., and Reno, Nev., not included.
[4] Lynchburg, Va., not included.
[6] Shreveport, La., not included.
[6] South Bend, Ind., not included.
[7] St. Paul, Minn., not included.
[8] Fort Smith, Ark., not included.
[9] Reno, Nev., not included.

Summary of weekly reports from cities, November 1 to December 5, 1931—Annual rates per 100,000 population compared with rates for the corresponding period of 1930—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Nov. 7, 1931	Nov. 8, 1930	Nov. 14, 1931	Nov. 15, 1930	Nov. 21, 1931	Nov. 22, 1930	Nov. 28, 1931	Nov. 29, 1930	Dec. 5, 1931	Dec. 6, 1930
98 cities	12	[3] 11	12	15	12	15	[8] 7	10	[4] 7	[4] 10
New England	10	5	7	24	10	17	2	12	5	7
Middle Atlantic	11	5	6	4	8	5	4	3	5	8
East North Central	6	9	11	5	5	9	[6] 6	4	4	10
West North Central	21	[3] 4	13	19	8	23	[7] 9	8	4	6
South Atlantic	30	32	36	34	24	28	34	32	[4] 16	18
East South Central	17	24	23	48	41	12	6	12	12	12
West South Central	30	28	24	87	41	84	[8] 7	70	27	[8] 26
Mountain	9	18	0	26	9	53	[9] 0	9	26	9
Pacific	0	16	10	10	18	10	2	6	10	10

INFLUENZA DEATH RATES

91 cities	7	9	8	9	7	10	[10] 7	9	[4] 7	[4] 9
New England	12	2	14	5	7	7	0	2	2	5
Middle Atlantic	8	12	10	8	6	7	9	11	4	6
East North Central	5	6	2	9	4	5	[5] 5	7	6	8
West North Central	6	3	6	6	6	6	[7] 3	0	6	12
South Atlantic	4	10	6	6	12	24	6	10	[4] 4	20
East South Central	0	26	0	39	25	13	13	26	38	13
West South Central	17	14	7	28	10	36	17	14	7	[8] 34
Mountain	17	9	27	9	17	62	[9] 27	26	9	18
Pacific	5	7	12	5	5	7	7	7	19	2

PNEUMONIA DEATH RATES

91 cities	88	101	86	115	101	116	[10] 86	109	[4] 89	[4] 99
New England	67	89	101	114	84	126	99	77	91	73
Middle Atlantic	107	116	106	129	116	133	98	118	95	101
East North Central	64	74	52	85	70	82	[5] 52	78	56	77
West North Central	80	87	88	78	115	138	[7] 119	93	88	132
South Atlantic	117	152	97	172	152	156	122	180	[4] 146	154
East South Central	120	136	151	188	183	175	107	136	95	155
West South Central	66	110	55	103	79	114	66	153	135	[8] 128
Mountain	139	194	148	220	174	167	[9] 126	229	122	132
Pacific	53	42	70	67	50	50	74	70	77	60

[3] Waterloo, Iowa, not included.
[8] South Bend, Ind., St. Paul, Minn., Fort Smith, Ark., and Reno, Nev., not included.
[4] Lynchburg, Va., not included.
[5] Shreveport, La., not included.
[6] South Bend, Ind., not included.
[7] St. Paul, Minn., not included.
[8] Fort Smith, Ark., not included.
[9] Reno, Nev., not included.
[10] South Bend, Ind., St. Paul, Minn., and Reno, Nev., not included.

FOREIGN AND INSULAR

BRITISH GUIANA

Deaths from certain diseases—1928, 1929, 1930.—According to the annual report of the Surgeon General of British Guiana for the year 1930, deaths from certain diseases were reported in the colony during the years 1928, 1929, and 1930, as follows:

Disease	1928	1929	1930	Disease	1928	1929	1930
Ancylostomiasis	33	10	28	Influenza	91	121	94
Blackwater fever	6	11	12	Malaria	1,563	1,198	1,104
Diarrhea and enteritis	557	448	380	Nephritis	694	514	528
Dysentery	185	141	105	Pneumonia	711	661	588
Filariasis	47	52	37	Tuberculosis	301	276	302
Heart disease	363	351	359	Typhoid fever	58	44	53

Population Dec. 31, 1930, 312,489.

CANADA

Provinces—Communicable diseases—Week ended November 28, 1931.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended November 28, 1931, as follows:

Province	Cerebrospinal fever	Influenza	Lethargic encephalitis	Poliomyelitis	Smallpox	Typhoid fever
Prince Edward Island [1]						
Nova Scotia		19			1	3
New Brunswick						4
Quebec	2			17		15
Ontario	1	6	2		2	11
Manitoba	1				1	8
Saskatchewan					5	
Alberta					2	
British Columbia						1
Total	4	25	2	17	11	42

[1] No case of any disease included in the table was reported during the week.

Quebec Province—Communicable diseases—Week ended November 28, 1931.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended November 28, 1931, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	2	Paratyphoid fever	1
Chicken pox	142	Poliomyelitis	17
Diphtheria	53	Scarlet fever	80
Erysipelas	6	Tuberculosis	17
German measles	9	Typhoid fever	14
Measles	165	Whooping cough	73
Mumps	29		

CUBA

Habana—Communicable diseases—Four weeks ended November 7, 1931.—During the four weeks ended November 7, 1931, certain communicable diseases were reported in the city of Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox	2		Poliomyelitis	2	
Diphtheria	9	1	Scarlet fever	2	
Leprosy	2		Tuberculosis	23	4
Malaria	18		Typhoid fever	9	4
Measles	54				

GREAT BRITAIN

England and Wales—Vital statistics—July–September, 1931.—During the third quarter of the year 1931, 161,267 births and 96,745 deaths were registered in England and Wales, giving a birth rate on an annual basis of 16.0 per 1,000 population and a death rate of 9.6 per 1,000. The figures are provisional. The mortality of infants under 1 year of age was 45 per 1,000 live births.

During the 13 weeks ended October 3, 1931, deaths from certain communicable diseases were reported in 107 boroughs and great towns, including Greater London, as follows:

Disease	Number of deaths	Death rate per 1,000 population	Disease	Number of deaths	Death rate per 1,000 population
Diarrhea and enteritis (under 2 years)	566		Scarlet fever	44	0.01
Diphtheria	298	0.06	Smallpox	0	
Influenza	259	.05	Typhoid fever	18	
Measles	146	.03	Whooping cough	315	.05

Deaths from certain communicable diseases in 159 smaller towns for the quarter ended September 30, 1931, were as follows:

Disease	Deaths	Disease	Deaths
Diarrhea and enteritis (under 2 years)	73	Scarlet fever	10
Diphtheria	46	Smallpox	0
Influenza	63	Typhoid fever	9
Measles	35	Whooping cough	38

England and Wales—Communicable diseases—Thirteen weeks ended October 3, 1931.—During the 13 weeks ended October 3, 1931, cases of certain communicable diseases were reported in England and Wales as follows (civilians only):

Disease	Cases	Disease	Cases
Diphtheria	10,820	Puerperal pyrexia	1,406
Ophthalmia neonatorum	1,369	Scarlet fever	18,941
Pneumonia	6,701	Smallpox	459
Puerperal fever	512	Typhoid fever	737

Scotland—Vital statistics—Quarter ended September 30, 1931.—The Registrar General of Scotland has published the following statistics for the third quarter of the year 1931:

Population (provisional)	4,842,554	Deaths from—Continued.	
Births	22,659	Heart disease	1,016
Birth rate per 1,000 population	18.6	Influenza	56
Deaths	13,242	Pneumonia	133
Death rate per 1,000 population	10.8	Pneumonia, lobar	185
Marriages	9,351	Measles	97
Deaths under 1 year	1,353	Nephritis (acute)	46
Deaths under 1 year per 1,000 births	60	Nephritis (chronic)	299
Deaths from—		Puerperal sepsis	31
Bronchitis	433	Scarlet fever	19
Broncho-pneumonia	304	Syphilis	24
Cerebrospinal fever	54	Tetanus	2
Diabetes	164	Tuberculosis	928
Diphtheria	69	Typhoid fever	6
Dysentery	2	Whooping cough	121
Erysipelas	29		

SWITZERLAND

Deaths from tuberculosis—1911–1920, 1921–1930.—According to a recent report, deaths from all forms of tuberculosis occurred in Switzerland, during the 10-year periods 1911–1920 and 1921–1930, as follows:

Age group	Deaths			
	1911–1920		1921–1930	
	Males	Females	Males	Females
0–14	4,757	5,505	2,588	2,988
15–29	9,495	13,911	7,039	11,353
30–49	12,276	11,459	8,737	8,120
50–69	8,148	7,115	7,135	5,982
70 and over	1,488	2,241	1,406	2,158
Total	36,164	40,231	26,905	30,601

The population of Switzerland, according to the census of Dec. 31, 1930, is 4,082,511.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931					November, 1931				December, 1931	
							3	10	17	24	31	7	14	21	28	5	12
Ceylon: Colombo	C	1		3											1	1	
	D	1		3											1	1	
China:																	
Canton	C	1			2											3	
Hankow	C							8		5	18						
	D							6			1						
Shanghai	C		1	7	125	38	29	17	17	8							
	D				9	5	8			4							
Swatow	C	10	7														
Tientsin	C	10															
	D	1															
India	C	18,001	22,074	36,514	39,223	7,552	10,172	4,556									
	D	10,337	12,093	20,276	21,683	3,716	4,808	2,450									
Bombay	C		23	44	42	1	1	2		4	1			1	3		
	D		16	25	17		1	2			1			1	4		
Calcutta	C	292	237	110	46	18	23	3	7	14	13	19	28	22	19		
	D	168	155	30	15	6	12		5	9	4	10	14	10	11		
Chittagong	C								1								
Karikal	C			1	2	1											
	D			1	2												
Madras	C	9	4	6	5												
	D	4															
Moulmein	C		1														
	D		1														
Negapatam	C				1												
Rangoon	C	4	4	1		1				1							
	D	2	1	1		1				1							
Vizagapatam	C	1															

India (French):																	
Chandernagor	C	3	5	7	2	1				1							
	D	3	1	7	2	1				1							
Pondicherry	C	3	3	3	4		1										
	D	3	3	2	2												
India (Portuguese)	C	1	2	2	34		17	19	39	18	20						
	D		1	2	18		10	4	12	3	6						
Indo-China (see also table below):																	
Cochin-China—Rachgia	C			P													
Pnompenh	C	1	5	2	2		1				2	2					
	D	1	2	1	2		1										
Saigon and Cholon	C	61	14					1									
	D	41	7					1									
Iraq:																	
Abulkhasib	C				6												
	D				5												
Amara	C			2	66			2	2	2			3	3			
	D			1	59				1	1			2	4			
Amara Province	C				96	32	21	15	27	13	7	15			3		
	D				120	29	24	14	17	10	6	8			2		
Basra	C			547	293	77	19	29	32	38	30	9	1				
	D			287	154	34	11	13	26	7	18	10	1				
Basra Province	C			5	53	26	14	1	1	3	7						
	D			2	30	9	8	1	1	1	4						
Dinwaniyah	C					1											
Dinwaniyah Province	C					15	8	14	24	22	1						
	D					11	6	5	22	10	5						
Iwaniyah	C					22											
	D					15											
Kut Province	C										17	3					
	D										12	2					
Muntafiq Province	C				225	55	54	45	55	17	19	9	23	1	1		
	D				145	38	57	28	37	10	18	6	17	3			
Nasiriyah	C				88	4	4	18	7	4	7	6	7	2	6		
	D				75	3	4	18	3	3	6	3	6		7		
Suqelshuyukh	C				2												
	D				2												
Japan: Taiwan—Kelung	C											2					
Persia:[1]																	
Abadan	C								1		3			1			
Ahwaz	C								12		84	16	3		9		
	D								7		69	21	8		7		
Khorramabad	C													18	16		
	D													10	10		
Mohammerah	C								1								

[1] On Oct. 23, 1931, cholera was reported at Mohammerah, Abadan, and Ahwaz, Persia. During the period from Oct. 22 to Nov. 7, 1931, 141 cases and 97 deaths were reported. The diagnosis of cholera was not confirmed upon bacteriological examination.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931					November, 1931				December, 1931	
							3	10	17	24	31	7	14	21	28	5	12
Philippine Islands: [1]																	
Provinces—																	
Capiz	C	4			35	49	21	5	4		7	5			4	16	7
	D	4			16	35	16	5	3		5	4			4	10	5
Cebu	C			3													
	D			3													
Iloilo	C	26	27														
	D	21	25														
Negros: Occidental	C	2															
	D	1															
Siam	C	4	3	1	1												
	D	2	1		1												
Bangkok	C	1	4	1	1												
	D	1	2														
On vessel:																	
S. S. City of Eastborne, at Calcutta, from Cocanada	C	1															
S. S. Tairea, at Penang, from Calcutta	C	1															
S. S. Bandar Shalpour, at Bushire, Persia, from Basra	C		1														
	D		1														
S. S. Kohistan, at Basra, from Bushire, Persia	C		2														
S. S. Cathay, at Kobe, Japan, from Shanghai	C			4													
	D			1													
S. S. Kasagi Maru, at Moji, from Shanghai	C				1												
S. S. Ankoo, at Nagasaki, from Shanghai	C				2												
	D				1												

[1] Figures for cholera in the Philippine Islands are subject to correction.

Place		May, 1931	June, 1931	July, 1931	August, 1931			September, 1931			October, 1931			Nov. 1-10, 1931
					1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	
Indo-China (French) (see also table above):														
Cambodia [1]	C	117	308	241	12				8	6	1	16	2	3
	D	63	109	60	2				4	3	1	16	1	
Cochin-China [1]	C	174	140	143	39				9	9	11	2	1	5
	D	133	106	42	32				6	7	10	2	1	4

[1] Reports incomplete.

PLAGUE

[C indicates cases; D, deaths; P, present]

Place		May 31-June 27, 1931	June 28-July 25, 1931	July 26-Aug. 22, 1931	Aug. 23-Sept 19, 1931	Week ended—										
						Sept. 26, 1931	October, 1931					November, 1931				December, 1931	
							3	10	17	24	31	7	14	21	28	5	12
Algeria:																	
Algiers	C			2													
Bone	C	1															
Philippeville	C		1	2													
	D		1	1													
Argentina: San Juan Province	C		P														
Belgian Congo	C	1															
	D	1															
British East Africa (see also table below):																	
Tanganyika	C	17	6	8	4	8	2		3								
	D	10	6	2	4	4			1								
Uganda	C	298	418	285	289	83	62	67	64	71							
	D	286	400	281	207	82	63	67	58	69							
Ceylon: Colombo	C	2	1	6	3	1	1	2							1		
	D	2	1	6	3	1	1	1							1		
Plague-infected rats				8													
Chile: Santiago	C								1								
	D								1								

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931					November, 1931				December, 1931	
							3	10	17	24	31	7	14	21	28	5	12
China:[1]																	
Shansi Province [2]	C										P						
Shensi Province [2]	C										P						
Dutch East Indies:																	
Batavia and West Java	C	116	75	58	65	21	31		29	28	34	1					
	D	66	75	58	65	21	31		29	28	34						
Java and Madura	D	192	212	205	233	77	69	85	94	97	133						
Ecuador (see table below).																	
Egypt:																	
Alexandria	C	4	13	9	5	1				1	1	3	1		1	1	1
	D	4	5	3	2							1	1	1	1		
Assiout	C	11															1
	D	1															
Beheira	C				2												
Dakahlia	C		1	2													
Deirout	C	3															
	D	1															
Gharbieh	C	1															
	D	1															
Girga	C		1													1	
Kena	C													2			2
	D													1			2
Minieh	C	3	12									1	3			1	1
	D	1	4									1	1				
Port Said	C	3	5	2						1			1	2		2	
	D	2	1											2			
Tanta	C			2	2									2			
	D													2			
France: Rouen—Devilleles	C										P						

Hawaii Territory:																	
Hawaii—Hamakua—Plague-infected rats				1													
Maui Island—																	
Haliimaile—Plague-infected rats					1												
Kula District	C			1													
	D			1													
Makawao—Plague-infected rats					1												
Paia—Plague-infected rats						1											
Pasulo—Plague-infected rats											1						
India	C	88	221	684	1,832	723	527	600									
	D	51	128	440	772	355	222	263									
Bassein	C		4	2	4	1				1							
	D		3	2	4	1				1							
Bombay	C		12					1		1					1		
	D		6					1							1		
Plague-infected rats		37	48	47	57	9	9	12	12	4		11	7	11	13		
Burma	C		16														
	D		10														
Madras Presidency	C	6	21		376		62	30	90			49					
	D	1	9		162		16	30	59			17					
Moulmein	C		9		5												
	D		1		9	2											
Rangoon	C	1	2	1	3					5				1			
	D	1	1	1	2					1				1			
Plague-infected rats		3	6	3	4	1	1	1	1	1							
Indo-China (see also table below): Pnompenh	C	3															
	D	2															
Iraq:																	
Baghdad	C	23	3	1	3						1			1	1		
	D	9	2		1									1			
Mauldhan	C											2	1	1			
	D											1		1			
Madagascar (see also table below): Tamatave	C			1	2	1											
Morocco	C					10			3	2	2						
	D								3		4						
Peru (see table below).																	
Senegal (see table below).																	
Siam	C	1		1	4	1	1	1	1	1				1			
	D	1			3	1	1		1	1							
Spain: Hospitalet—Barcelona Province	C			5	2	1	1			5		1	1				
	D			2	1		1			1							
Syria: Beirut	C		2	1	2	1	2					1					
Tunisia: Tunis	C	11			1			1									
	D	1															
Union of South Africa:																	
Cape Province—Plague-infected rats				1													
Orange Free State	C				P				P								

[1] On July 27, 1931, 1,250 cases of plague were reported in Chiobe and Changchow, China, since April. On Sept. 19, 1931, 18 deaths were reported in Changchuanpu and new cases in Kaitung and Fengtien.

[2] On Oct. 17, 1931, plague epidemic was reported in western Shansi Province, China, with 2,000 deaths at Hsinghsien.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		June, 1931	July, 1931	August, 1931	September, 1931	October, 1931	November, 1931
British East Africa (see also table above):							
Kenya	C	154	484	235	14	28	-------
Ecuador:							
Alamor Parish—Los Hoyos	C	-------	-------	-------	1	3	-------
Amaluza Parish—Cangochapa	C	-------	-------	-------	-------	2	-------
Calvas Canton—							
Cariamanga	C	-------	-------	-------	4	1	-------
Ovejeria	C	-------	1	-------	-------	-------	-------
Celicia Canton—Choras	C	-------	-------	-------	-------	1	-------
Loja Canton—							
Lapaz	C	-------	-------	-------	20	-------	-------
Naimuro	C	-------	-------	-------	-------	2	-------
Paterillo	C	-------	1	-------	-------	-------	-------
Tuburo	C	-------	-------	-------	-------	7	-------
Palas Canton—San Antonio	C	-------	-------	-------	1	1	-------
Indo-China (see also table above)	C	2	1	-------	1	3	-------
	D	2	1	-------	1	1	-------
Madagascar (see also table above):							
Ambositra Province	C	15	1	2	1	-------	-------
	D	15	1	1	1	-------	-------
Antisirabe Province	C	12	13	22	19	-------	-------
	D	12	12	22	19	-------	-------
Miarinarivo Province	C	-------	8	20	14	-------	-------
	D	-------	7	19	12	-------	-------
Madagascar—Continued.							
Moramanga Province	C	1	1	3	12	-------	-------
	D	-------	-------	3	11	-------	-------
Tananarive Province	C	10	5	45	65	-------	-------
	D	9	5	44	63	-------	-------
Peru	C	5	3	19	2	-------	-------
	D	1	2	14	2	-------	-------
Senegal:							
Baol [1]	C	-------	27	101	13	6	-------
	D	-------	13	58	8	2	-------
Dakar [1]	C	64	95	194	45	4	-------
	D	56	73	106	31	4	-------
Diourbel [1]	C	-------	-------	-------	13	-------	10
	D	-------	-------	-------	5	-------	5
Louga [1]	C	4	3	2	10	1	14
	D	2	1	1	4	2	8
Rufisque [1]	C	2	34	2	1	7	-------
	D	-------	-------	-------	-------	1	-------
Thies [1]	C	12	16	26	12	7	8
	D	3	7	16	8	5	2
Tivaouane [1]	C	3	3	-------	-------	-------	-------
	D	2	2	-------	-------	-------	-------

[1] Reports incomplete.

SMALLPOX

Place		May 31-June 27, 1931	June 28-July 25, 1931	July 26-Aug. 22, 1931	Week ended— Aug. 29, 1931	Sept. 5	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17	Oct. 24	Oct. 31	Nov. 7	Nov. 14	Nov. 21	Nov. 28	Dec. 5, 1931
Algeria:																			
Algiers	C	8	1												1				
Constantine	C		1			1													
Belgian Congo	C	42																	
Brazil: Porto Alegre (alastrim)	C	5	41	34	7	13	12	16	12	18		16	7	24					
	D		1	1	2		2			2				3					
British East Africa: Tanganyika	C	7	149	19	31	4	6	9	8	2	1, 121	53		18					
	D		17				1	4	4		91	2		2					
British South Africa:																			
Northern Rhodesia	C		21	26							1								
Southern Rhodesia	C	1	2			1	2												
Canada:																			
Alberta	C		1	1					12				1	2	2	1		2	
British Columbia	C		2	5		1	1								1	1			
Manitoba	C	4						1									1	1	
Winnipeg	C						1												
Nova Scotia	C																	1	
Ontario	C	32	35	5	4		2		5	2	1	9		7	3	5	3	2	
Kingston	C					1													
Ottawa	C	1					1		5	2		1		4	3	5			
Toronto	C	1																1	
Quebec	C		1																
Saskatchewan	C	54	42	26	8	8	12	5	1	6	3	1	11	3	1	18	12	5	
Regina	C								1			1							
Chile:																			
Antofagasta	C		1										2						
Santiago	C												1						
	D																		
China:																			
Amoy	C	4	2	1			1		1			1	1		1	6			
	D	3	2	1			1		1				1		1	4			
Canton	C	1	2		1										1	1	6	3	
Foochow	C	P	P	P		P		P		P		P		P		P			
Hankow	C								1					5	4				
Manchuria—Kwantung—Dairen	C	4	3	3															
Nanking	C	1																	
Shanghai—				1															
Foreigners only	C	11	3						35	29	17	17	1	6	2	12	16	13	
Including natives	CD	13	6	1	1		1		5	8					1			6	
Tientsin	C		8																

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	Sept. 5	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17	Oct. 24	Oct. 31	Nov. 7	Nov. 14	Nov. 21	Nov. 28	Dec. 5, 1931
Chosen (see table below).	D						1												
Colombia: Santa Marta	C		2		10														
Eritrea	D				2														
France (see table below).																			
Great Britain:																			
England and Wales	C	287	187	91	33		19	45	45	41	34	41	39	42	71	68	55	56	
Bradford	C	5																	
London	C	122	54	26	3	9	5	15	5	17	15	21	20	27	55	27	38	27	
London and Great Towns	C	228	152	69	13	30	11	34	35	31	25	37	31	37	66	45	48	48	
	D	1	1				1	1											
Sheffield	C									1						1			
Greece (see table below).																			
Honduras: Puerto Castilla	C									528	258						1		
India	C	7,413	5,359	2,927	483	484	409	329	382	122	47								
	D	1,704	1,352	746	144	108	109	72	100								1		
Bombay	C	6	6	2		1	2	2											
	D	5	6	1		1							1						
Calcutta	C	47	21	13	2	1	2		1				1						
	D	41	18	9	2	1	2		1	1	2	4	3		2				
Cochin	C			3									1						
Karachi	C	2		1															
	D	1														1		2	
Madras	C	2	2	1		1			1	5	6	1	2	2				1	
	D	1									2								
Negapatam	C	3	1	2	3		1			1		1				1			
	D																1		
Rangoon	C	6	3	4	1		1			2		1	1		1		2	2	
	D	2	1	2						1	1				4				
Tuticorin	C				2					4			1						
	D									1			1						
Vizagapatam	C									4			1						
	D	6	5	5	3	1	1	1	2	1			1						
		2	1	4	3	1	1	1											
India (French):																			
Chandernagor	C	1		3															
	D			2															

Karikal	C	6	4	7		2	5			5		3			3				
	D	6	4	6		2	1			1		3			3				
Pondicherry Province	C	7	28	20	1	6	1	18	1	4	14	4	9	18	5				
	D	7	28	20	1	6	1	16	1	4	12	4	9	16	5				
Indo-China (see also table below):																			
Pnompenh	C	2																	
	D																		
Saigon and Cholon	C		3	2	1		3	2	1	4	1			4	2	1	4	6	
	D		1	1	1		2		1	2				4	1		2	1	
Iraq:																			
Baghdad	C	1					1											1	
	D																	1	
Basra	C	1																	
Mosul Liwa	C		1	1					5										
Ivory Coast (see table below).																			
Japan: Nagoya	C		1																
Mexico (see also table below):																			
Jalisco (State)—Guadalajara	D	1	3	2					1	1	2				2		1		
Mexico City and surrounding territory	C	25	22	10	2	2	1		2	1	2	2	1	1	1		3		
	D	13	8	2			1	1	1	2		1	1						
Monterrey	C	1												2					
Torreon	C	3				1	1			1								1	
	D	2					1												
Morocco (see table below).																			
Netherlands: Friesland—Opsterland	C												[1] 1						
Nigeria	C								136	318									
	D								39	102									
Panama: Chiriqui	C																		3
Poland	C	3	18					1						1		1			
Portugal: Lisbon	C	48	45	37	10	21	18	17	16	11	6	15	19	16	17	26	22		
Rumania (see table below).																			
Siam	C	5	1				3												
	D	1	1																
Spain	C		7																
Straits Settlements	C			1															
Sudan (Anglo-Egyptian)	C	1					32										2		
	D						6												
Syria (see table below).																			
Turkey (see table below).																			
Union of Socialist Soviet Republics (see table below).																			
Union of South Africa:																			
Natal	C			P			P												
Orange Free State	C	P	P	P	P	P	P		P	P	P								
Transvaal	C	P	P										P	P					
Upper Volta	C	12	2																
	D																		
On vessel:																			
S. S. Taif (pilgrim ship) at Suakin from Jeddah	C			1															

[1] Imported case.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931			September, 1931			October, 1931			Nov. 1-10, 1931
						1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	
Indo-China (see also table above)	C	142	58	47	8	29	-------	-------	-------	7	27	10	11	26	20
	D	-------	-------	-------	4	11	-------	-------	-------	4	8	3	3	10	4
Ivory Coast	C	-------	-------	-------	-------	-------	-------	7	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	-------	-------	4	-------	-------	-------	-------	-------	-------	-------
Syria: Beirut	C	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Place		March, 1931	April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931
China: Harbin	C	7	-------	13	10	-------	-------	-------
Chosen	C	11	-------	1	4	2	-------	-------
	D	3	-------	-------	-------	1	-------	-------
France	C	15	6	54	9	20	-------	-------
Greece	C	-------	-------	3	1	-------	-------	-------
Mexico (see also table above)	D	-------	1	1	2	-------	-------	-------
Morocco	C	6	7	49	48	23	23	59
Rumania	C	1	-------	1	-------	-------	1	-------
Turkey	C	1	-------	9	1	-------	-------	-------
Union of Socialist Soviet Republics	C	1,903	1,516	1,345	-------	-------	-------	-------

TYPHUS FEVER

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	Sept. 5	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17	Oct. 24	Oct. 31	Nov. 7	Nov. 14	Nov. 21	Nov. 28
		September, 1931								October, 1931					November, 1931			
Algeria:																		
Algiers	C	9	2									1		1	1			
Bone	C			2														
Constantine Department	C	26	3	1				2		1				11	16	11	1	
Oran	C	2		1		1										1	1	
Bulgaria	C	30			1								1					
	D	6																
Chile:																		
Antofagasta	C													1				
Santiago	C												3					
China:																		
Manchuria—Harbin	C	16			1													
Shanghai	C		3	1					1									
Chosen (see table below).																		
Colombia: Cali	D					1												
Czechoslovakia (see table below).																		
Egypt:																		
Alexandria	C	3					1	1							1			
Beheira	C				1											1		
Cairo	C															1		
Gharbieh	D																	
Greece (see table below).																		
Guatemala (see table below).																		
Irish Free State:																		
Cork County—																		
Schull	C		1															
Skibbereen	C	2	1															
Kerry County—Listowel	C	1																
Limerick County—																		
Croom	C						2		1									
Glin	C								1									
Limerick	C		2	1														
Michelstown	C		1						1									
Rathkeale	C																	
Mayo County—																		
Castlebar	C			1														
Westport	C			1														
Japan	C	1																

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	Sept. 5	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17	Oct. 24	Oct. 31	Nov. 7	Nov. 14	Nov. 21	Nov. 28
Lithuania (see table below).																		
Mexico:																		
Durango	D		1															
Guadalajara	D			1														
Mexico City, including municipalities in Federal District	C	46	53	18	5	1	2	2	4	2	5	3	7	3	1		7	
	D	19	12	10	1	1		2	2	2	2	2	2	2			1	
San Luis Potosi	D		4	1														
Torreon	C		1								1	1		3				
	D		1								1	1		5	1			
Morocco	C	101	102	8						1		3		1				
	D	6	8															
Palestine	C	5	2	11				4	4	1	1		2		1			1
Paraguay: Asuncion	D						1											
Poland	C	97	53	31	6	2	1	2	2	8	3	1	2	6	6	6		
	D	4	5	2						1				1	2			
Rumania	C	80	11	23		4	6	3	1	6	7	4	12	12				
	D	13	5	2				1			2	1	3	3				
Tunisia: Tunis	C	73	2		1		1	1								3		
	D	4																
Turkey (see table below).																		
Union of Socialist Soviet Republics (see table below).																		
Union of South Africa:																		
Cape Province	C	P	P	P	P	P	P	P	P	P	P	P	P	P				
Municipality of East London	C	1		1														
Natal	C	P	P	P			1					P						
Orange Free State	C	P	12									P	P	P				
Transvaal	C	P	P	P	P	P	P	P	P	P	1	P	P	P				
Yugoslavia (see table below).																		

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931	October, 1931
Chosen: Seoul	C	4		6	1			
	D	1		1	1			
Czechoslovakia	C	5	11	2				
Greece	C	22	6	9	2	13	9	
	D	3				2	1	
Guatemala	C			33	34	3		
	D			15	5			
Lithuania	C	34	10	13	8	2		
	D	5		2				
Turkey	C	32	13	11	9		16	1
Union of Socialist Soviet Republics	C	1,513	1,324					
Yugoslavia	C	43	14	2	3	1		
	D	5						

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	September, 1931				October, 1931					November, 1931				December, 1931	
						5	12	19	26	3	10	17	24	31	7	14	21	28	5	12
Brazil:																				
Alagoas State	C			3																
	D			2																
Maceio	D														1					
Ceara State	C	1		1																
	D			1																
Pernambuco Province	C				2															
	D				2															
Recife	C								1											
	D								1											
Sergipe State	C	1																		
British Cameroons: Mamfe	C	2																		
Colombia: Magdalena Province—Near Cienaga	C		4																	
Gold Coast:																				
Akuse	C		2																	
	D		1																	
Dagomba District	C			4																
Kete Krachi	C										1									
Kintampo	C		1																	
	D		1																	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

YELLOW FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	September, 1931				October, 1931					November, 1931				December, 1931	
						5	12	19	26	3	10	17	24	31	7	14	21	28	5	12
Gold Coast—Continued.																				
Oda	C							1												
	D							1											1	
Salaga	C																		1	
	D																		1	
Tamale	C		2						2				1					2		
	D		2						2											
Wale Wale	C			1																
	D			1																
Ivory Coast:																				
Bobo Dioulasso	C		1																	
	D		1																	
Grand Bassam	C			4				1												
	D			2				1												
Kong Circle	C		4												1					
Seguela	C			P												1		1		
Tehini	C			1										1		1		1		
	D			1																
Nigeria																				
Senegal:																				
Podor (Hinterland)	C			1																
	D			1						1										
St. Louis	C									1										
Thies	C									1										
	D															2				
Sudan (French)	C		4													2				
Macina—Kayo Circle	C														1					1
	D														1					
Togo (French): Atakpame—Anie Circle	C																			
	D																			

Upper Volta:																				
Banfora	C		2						2											
	D		1						1											
Dedougou	C													2						
Diarabakoko	C								2											
	D								1											
Ouagadougou	C				1				1			1								

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July 25, 1931 1965
August 1, 1931 2026
August 8, 1931 2077
August 15, 1931 2205
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September 5, 1931 2395
September 12, 1931 2463
September 19, 1931 2521
September 26, 1931 2582
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July 25, 1931 2026
August 1, 1931 2077
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